

Air Conditioning & Refrigeration News

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IN THIS ISSUE

Is the trend to small homes, which is becoming very evident in current residential building, going to hurt or help appliance sales? This week's editorial (page 8) analyzes the trend and its effect upon appliance merchandising.

There has been a great deal of variety in the refrigeration equipment that has gone into locker plants. Recently there has been considerable activity in locker plant work in Tennessee, and if you're interested in what kind of equipment is going into some of these new plants, you'll find the data tabulated on page 4.

You may have read the piece on Powel Crosley, Jr. in the last issue of the Saturday Evening Post. Taking up where the Post writer left off, Editor George Taubeneck adds some interesting biographical notes on Mr. Crosley in his "Personalities" column on page 7.

A man who runs a "production line" wholesale refrigeration service plant solely for independent service men explains, in a story on page 6, why his setup should help service men to make more money, and tells just how he operates.

The correspondence (published in the NEWS) with O. A. Fusch and Donald Nelson about their problems in breaking into refrigeration installation and service work, which has attracted so much written comment from readers, this week prompts the head of a leading service and parts jobbing firm in Havana, Cuba and the manager of an ice plant to come forth with some good ideas about preparing oneself for a job. The letter from the Cuban reader is published on page 10; the one from the ice plant manager will be found on page 8 (editorial page).

Grunow refrigerators are no longer being manufactured, but there are many thousands of them in the field that will demand service. Continuing the series of articles on Grunow service on pages 12 and 13.

News about the major appliance field on page 2; commercial refrigeration on page 5; air conditioning on page 11; soda fountain refrigeration service on page 14.

Trane Reports \$260,371 Profit For 8 Months

LA CROSSE, Wis.—The Trane Co. and subsidiaries reported Sept. 25 that unaudited figures for the eight months ending Aug. 31 showed a \$260,371 profit after all charges had been subtracted but before federal income taxes had been deducted. In the same months last year the profit before deduction of taxes was \$81,737.

Gross sales for the first eight months of 1939 were \$3,077,338, a 35.8% increase over the corresponding period of 1938.

Air Conditioning In War and Peace To Be Discussed At Lehigh Conference

BETHLEHEM, Pa.—Dr. Philip Drinker of the Harvard School of Public Health will speak on "Air in War" at the get-together banquet during the Eastern Air Conditioning Conference, to be held at Lehigh University Nov. 10-11. Col. Crosby Field, past president of the American Society of Refrigerating Engineers, will preside at this dinner, which concludes the first day's program. Leading authorities are scheduled to speak at the two-day meeting, which is sponsored by the A.S.R.E., the Philadelphia Chapter of the American Society of Heating & Ventilating Engineers, and the Air Conditioning Manufacturers Association. The final session will be on Saturday morning, Nov. 11. A. R. Stevenson, Jr., of General Electric Co., past president of the

A.S.R.E., will preside at the first session, when greetings will be extended by C. C. Williams, president of Lehigh University.

Speakers will include Carl F. Boester, consulting engineer of St. Louis, who will discuss "Refrigeration Storage For Handling Peak Loads"; John R. Hertzler, York Ice Machinery Corp., who will talk on "Hotel Guestroom Air Conditioning Practices"; and S. R. Lewis, consulting engineer of Chicago, who will describe an "Analysis of Air Conditioning For an Educational Building."

Prof. Frederick E. Giesecke of College Station, Tex., president-elect of the A.S.H.V.E., will preside at the afternoon meeting, which will be devoted to the use of air conditioning. (Concluded on Page 16, Column 3)

Moves Up



GEORGE H. SMITH

Sales of Refrigerators Leveled Off In August

DETROIT—Dropping below corresponding 1938 monthly totals for the first time this year, world shipments of household electric refrigerators during August amounted to approximately 105,000 units, as compared to 105,400 in the same month a year ago, according to estimates by AIR CONDITIONING & REFRIGERATION NEWS.

World shipments for the first eight months of the year, however, led 1938 figures by more than a half-million units. Shipments through August of this year totaled 1,755,300, against 1,210,100 in the same period of last year, to put 1939 on top by 545,200 units.

The industry's best August record, attained in 1937, saw estimated world shipments of 135,500 units, so that this year's total for the month is just 30,500 off the high mark.

Drop in August shipments this year may be accounted for by the fact that, in 1938, the month saw more sales to distributors and dealers than did July. Shipments in July of last year were estimated at 100,100 units, while in that month this year they amounted to 177,000 units. So, for the July-August period, 1939 shipments show a gain of 76,500.

World shipments by 17 members of National Electrical Manufacturers Association totaled 99,716 units in August this year, as compared to 100,144 in the same month of 1938, and 125,028 in August, 1937, when the all-time high total was established.

Shipments by Nema members in the U. S. alone amounted to 88,108 units during the month, as compared to 86,729 in August, 1938. From this it is apparent that last year's gain was in the export field and not in the domestic market.

For the first eight months of the year, Nema members' world ship-

Smith, Williams Get Promotions At Edison G-E

Smith General Manager & Williams Heads Sales Of Refrigerator Div.

CHICAGO—In two promotions in the Edison General Electric Appliance Co. organization effective Oct. 1, George H. Smith, Hotpoint refrigeration division manager, has been named general merchandising manager, and F. B. Williams has been appointed manager of the company's refrigeration sales division.

As general merchandising manager, Mr. Smith's new duties will include coordination of sales plans and activities of all Hotpoint product sales divisions.

Mr. Williams, new refrigeration sales manager, formerly was Hotpoint's Atlanta district manager. Both men will make their headquarters in Chicago.

Nebraska '39 Appliance Sales Totals Reported

OMAHA, Neb.—Unit sales of major appliances by dealers in this area were up 1.7% for the first eight months of 1939, as compared with the same period last year. Range sales led the increase with 115.6% for the period, while refrigerator sales dropped off 3.37%. Sales in small appliances decreased 12% so far this year.

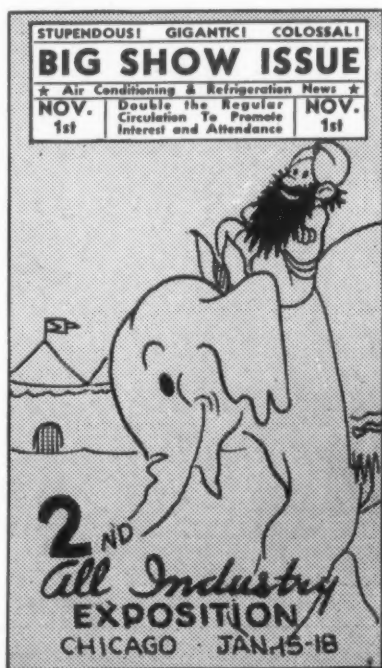
First eight months, 1939, 263 electric ranges were sold, while only 122 were sold in the same period in 1938. Refrigerators decreased slightly from 4,577 in the 1938 period to 4,423 this year.

A total of 134 oil burners and stokers were sold in August this year as compared to 55 in July.

All-Season Refrigeration Theme of Fall Drives

OMAHA, Neb.—Advantages of winter refrigeration will be stressed in last quarter sales campaigns of appliance dealers here. In cooperation with Nebraska Power Co., dealers will use stickers telling of the "seven ways to save" on every refrigerator in their showrooms and on those sold. The stickers are designed to tell a punch story of refrigeration for all seasons.

The utility will aid winter sales by giving winter recipes for refrigerator use wide publicity through its home service advisors, and on its



Rema Members To Meet Next Week At Turkey Run

CHICAGO—Refrigeration Equipment Manufacturers Association members will hold their fall meeting Oct. 12-13 at the Turkey Run Inn, Turkey Run State Park, Indiana, to complete final plans for the Second All-Industry Refrigeration & Air Conditioning Exhibition to be held in January, and to discuss trade problems.

A meeting of the board of directors also will be held during the conclave.

Under the direction of E. A. Vallee, vice president, Automatic Products Co., who is acting as chairman of the program committee, a well balanced program, similar to the one which he presented at the spring meeting and which met with much favorable comment, has been arranged. Subjects supplementing those considered in detail at the spring meeting at French Lick are to be developed at this meeting.

Turkey Run State Park is a popular fall convention spot in the Middle West. Direct connections are made to Terre Haute from the east, south, and southwest; connections are made to Clinton, Ind., from Chicago and points north.

Court Decision Affects Employe Patent Rights

MADISON, Wis.—The state supreme court has denied a rehearing on the suit of the Barlow & Seelig Mfg. Co., Ripon, Wis., against Allen J. Patch, former engineer for the firm.

The high court recently had reversed a decision by Judge Henry P. Hughes, Oshkosh, who had held that a patent in the case was the property of the company and not of Mr. Patch.

The company, in the original action, sought to have the patent, which covered developments of a transmission device for electric washing machines, declared its property. It charged that Mr. Patch designed the device on the "company's time," that the firm paid for the patent and hence was entitled to exclusive use of it.

Mr. Patch claimed there was nothing in his contract with the Barlow & Seelig company which gave it a claim to his invention and that he was employed as a production superintendent rather than an engineer or designer.

Judge Hughes overruled this contention, holding that Mr. Patch was an engineer and designer and that his device, which was patented in 1931, was the property of the company.

Mr. Patch appealed the decision to the state supreme court, which along with its reversal, held that the company had certain rights to the use of the patent.

W. C. Rodd To Direct Celotex Advertising

CHICAGO—W. C. Rodd, formerly assistant to H. W. Collins, vice president in charge of merchandising of The Celotex Corp., has been named advertising manager of this company.

Mr. Rodd has been associated with the Celotex organization for 15 years in various sales, advertising, and merchandising capacities, having joined the firm in 1924 as sales correspondent in the general offices.

From this post he was advanced to become a member of the executive sales staff, assisting in the administration of marketing programs and doing sales development work in the field. Later, acting as assistant to the vice president in charge of sales, Mr. Rodd handled advertising and merchandising activities.

East's Trade-Ins Going West By Boat For Resale

Units Obtained In N. Y. Offered San Francisco Buyers At \$89.50

SAN FRANCISCO—Used electric refrigerators shipped here from New York City are being offered for sale to low-income prospects in this territory.

Marking the first major merchandising effort on this type of equipment by a large-size local organization, the Emporium, San Francisco's biggest department store, in an advertisement in the Sunday Examiner of Sept. 24 announced a sale of 50 reconditioned Westinghouse boxes at a unit price of \$89.50.

The department store obtained the used refrigerators from the General Refrigeration Co. of San Francisco, which buys the units in New York City and has them shipped to this city by boat at a low freight rate. Models involved in the present sale are said to be of about 1935 manufacture.

General Refrigeration Co. previously had been selling the reconditioned units obtained from the east direct to consumers through its own organization. This is said to be the company's first order from a department store, and may signify the beginning of an expanded effort to reach prospects interested in low-price units.

On the other hand, the used models may merely be serving as "leaders" to increase appliance department floor traffic and give salesmen a chance to "sell up" prospects to new equipment at a higher price.

Whatever its purpose, the move does indicate a change in the Emporium's attitude toward used refrigerators, since the former practice of the department store was to pass up any selling of trade-ins, disposing of any units taken in on new equipment through other trade sources.

In its present used refrigerator sales, the department store is offering a one-year guarantee, with time-payment terms of \$5.60 a month. The units are advertised as being thoroughly reconditioned.

New Credit Methods Called Power Co. Need

MILWAUKEE—The need for utility companies to discard credit and collection methods that are irritating customers and to streamline customer-contact procedure was emphasized by A. F. Kaulfuss of Northern States Power Co. in a speech at the credits and collection round table session during the recent annual convention of the Wisconsin Utility Association's accounting section.

As a step in the direction of streamlining, he advocated abolishing the policy of asking for deposits and requiring customers to answer in pen and ink questions they consider unwarranted curiosity. He pointed out that most of the essential information a credit department needs to know about new customers can be ascertained more happily through a friendly chat with them.

A good first impression made upon a customer often wins a lifetime friend for a company, he said.

"This plan proposes that you ask for a deposit only if you have a previous poor payment record on your books," Mr. Kaulfuss explained. "If such an open credit account becomes delinquent, you can ask for a deposit in a sufficient amount because you have his performance record. It is also true that guarantors naturally drop out of the picture entirely. The existence of a deposit has a positive tendency to

(Concluded on Page 16, Column 1)

Major Appliances

Mama Gets New Helper



Mrs. George M. Ferris (left), as the millionth visitor to Westinghouse's "Battle of the Century" dishwashing contest at the New York World's Fair, was awarded this brand new Westinghouse electric dishwasher. Mrs. Ferris' husband and two children witnessed the presentation.

Two New 'White Star' Ranges Introduced By Detroit Vapor Stove

DETROIT—Full size ovens, large storage compartments, and convenient grouping of switches and control signals feature the two 1940 "White Star" electric range models introduced by the Detroit Vapor Stove division of Borg-Warner Corp.

Both of the new models are equipped with four closed Chromolox elements—one 2,000 watt, two 1,200 watt, and one 1,000 watt. A 1,500 watt cooker well is available at extra cost.

Standard equipment on both models includes six-position, five-heat switches, signal-light oven control, one-piece tank-type porcelain lined ovens and broiler lining with slide stop oven racks, full rock wool insulation, modernistic styling, new beveled paneling, flush-to-wall construction. Hardware has white plastic ends with satin chrome centers.

Model DE-28 is equipped with a deluxe broiler in a separate compartment, served by a 3,400-watt oven element. It also is equipped with a porcelain enamel broiler pan and smokeless grill.

The broiler on the Model DE-26 is in the upper part of the oven, and the 3,000-watt oven element is moved to the broiling position as necessary. A porcelain finished ribbed broiler pan completes the group.

A full automatic grouping of cooking top, electric lamp, condiments, and timing clock is available.

Advent of TVA Brightens Outlook For Chattanooga Appliance Merchants

Going Up!

DETROIT—Sales of Kelvinator electric washers during August were 308% ahead of those of the same month a year ago, reports R. W. Poirson, in charge of home laundry equipment sales for the company.

Total washer and ironer sales for the first eight months of the calendar year were 136% greater than those of the comparable period in 1938, Mr. Poirson says.

SOUTH BEND, Ind.—Sales of Bendix automatic home laundry units for the 10-week period consisting of July, August, and part of September were 143% of 1938 figures for the same period, reports J. S. Sayre, vice president in charge of sales.

Mr. Sayre pointed out that, although a lower priced "Standard" model was introduced this year, dollar volume for the 10-week period mentioned was still 137% of the 1938 figure for the same period.

It's 'Double or Nothing' For Kelvinator Dealers

DETROIT—Kelvinator washer and ironer dealers can win double money for their window displays this year. The company has offered to match the cash awards set up by the American Washer and Ironer Manufacturers' Association in cases in which its own dealers featuring Kelvinator laundry equipment qualify for prizes.

Cash awards are for the best window displays in connection with National Washer-Ironer Week, Oct. 14 to 21. For purposes of the contest, dealers have been divided into three classes or groups—(1) public utilities and department stores, (2) appliance shops and hardware stores, and (3) furniture stores and others.

Seven prizes will be awarded for the best window displays in each group—21 in all, totaling \$1,350. Kelvinator will make an equal award to any of its own laundry equipment dealers who win prizes, using Kelvinator equipment.

Window streamers, pennants, and other material featuring National Washer-Ironer Week, supplied by the association, must be used in each display.

CHATTANOOGA, Tenn.—With the recent coming of cheap TVA power to Chattanooga, and the even more recent setting up of a \$30,000 "kitty" by the city's power board to finance installation of electric ranges and water heaters, harvest days for appliance sales are here in real earnest for local distributors and dealers.

The \$30,000 free wiring allotment furnished dealers with a real springboard to sales. Following the board's decision, retailers took large-scale newspaper space to tell housewife prospects of this new opportunity to take advantage of this money-saving service.

In making the appropriation, the power board announced it was doing this for three purposes: to cut initial installation expense for owners; to permit wider use of the new, cheap power; and to help dealers increase their range and water heater sales.

'NO COMPETITION'

The board also announced definitely that the city would not enter into the sale of appliances in competition with independent dealers, and that the large showrooms of Tennessee Electric Power Co., acquired by the city in its purchase of utility properties, would be loaned to appliance dealers for display of their products.

Sales room consists of practically the entire first floor of the block-long utility building in downtown Chattanooga, well lighted and conveniently arranged for appliance display.

In another effort to boost dealers' sales, the power board announced that members of its power sales promotion staff would be available to explain to customers the uses of electric ranges and refrigerators, costs, and other such details. The board has a staff of 25 trained men and women, many of them former employees of Tennessee Electric Power Co., to promote the use of electric power in this territory.

Employees of the power board will be on the floor of the display room to answer questions of visitors, but no direct sales will be made there, and no attempt will be made to direct the interest of visitors to any particular make of appliance.

For convenience, the price of the unit will be shown on a tag affixed to the appliance. A bulletin board in the display room will carry the names of dealers whose appliances are being shown on the floor.

Aug. Nema Household Sales Decline Slightly From '38; War Threat Fails To Stifle Foreign Shipments

The following 17 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for August, 1939:

Apex Electrical Mfg. Co., Crosley Corp., Edison General Electric Appliance Co., Inc., Frigidaire Div. General Motors Corp., Gale Products Div. Outboard Marine & Mfg. Co., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Landers, Frary &

Clark, Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Philco Refrigerator Co., Sparks-Wilmington Co., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co.

The sales of the reporting companies include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR AUGUST, 1939

	Domestic	Canadian	Other Foreign	Total
Lacquer (Ext.) Cabinets Complete				
1. Chest	2	1†	20	23
2. Less than 3 cu. ft. ....	...	60	10	70
3. 3 to 3.99 cu. ft.	2,211	22	635	2,868
4. 4 to 4.99 cu. ft.	14,690	1,258	2,443	18,391
5. 5 to 5.99 cu. ft.	11,635	623	1,822	14,080
6. 6 to 6.99 cu. ft.	48,091	982	1,315	50,388
7. 7 to 7.99 cu. ft.	989	12	53	1,054
8. 8 to 8.99 cu. ft.	4,695	54	320	5,069
9. 10 to 12.99 cu. ft.	28	...	...	28
10. 13 cu. ft. and up.	28	...	2	30
11. Total Lacquer	82,369	3,010	6,620	91,999
Porcelain (Ext.) Cabinets Complete				
12. Up to 4.99 cu. ft.	4	...	93	97
13. 5 to 5.99 cu. ft.	744	15	243	1,002
14. 6 to 6.99 cu. ft.	2,557	9	254	2,820
15. 7 to 7.99 cu. ft.	202	...	1	203
16. 8 to 8.99 cu. ft.	1,484	4	125	1,613
17. 10 to 12.99 cu. ft.	341	...	13	354
18. 13 cu. ft. and up.	265	2	30	297
19. Total Porcelain	5,597	30	759	6,386
20. Total—Lines 11 and 19.	87,966	3,040	7,379	98,385
21. Separate Systems ¼ hp. or less.	138	4	560	702
22. Separate Household Evaporators.	4	556	69	629
23. Total—Lines 20, 21, and 22.	88,108	3,600	8,008	99,716
24. Condensing Units ¼ hp. or less.	349	485	183	1,017
25. Cabinets—No Systems	40	...	6	46
Index Value* of Total Dollar Sales.	106.0	328.0	77.7	106.4

*Based on weighted sales for 1934, 1935, and 1936. †Includes sales and credits.

WATCH NORGE DEALERS

Go to Town!

The time is right . . . the NORGE line is finer than ever before at prices geared to the time . . . streamlined merchandising plans and "dealer helps" make the NORGE dealership worthwhile.



THE INDUSTRY'S Biggest OPPORTUNITY!

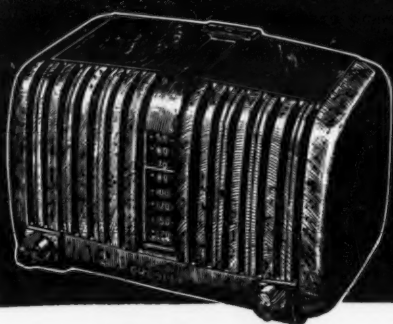
FILL IN NAME AND ADDRESS AND MAIL NOW!

NORGE DIVISION, Borg-Warner Corporation
Detroit, Michigan

Name _____

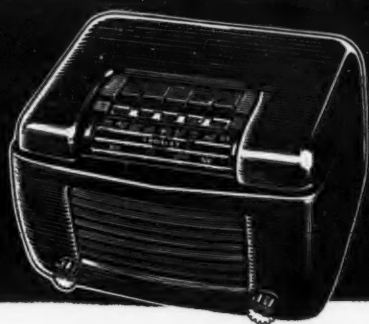
Address _____

City _____ State _____ AC-1



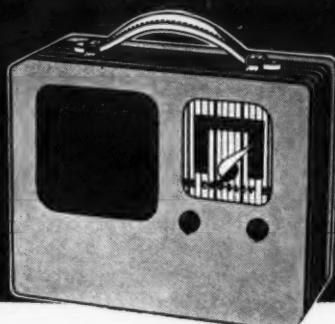
CROSLEY 599A

Operates AC-DC current. No ground. Carry it anywhere. Etched dial. Unusually clear tone. Brown bakelite case \$7.99. Colored cabinets slightly higher. Other table models \$9.99 to \$29.95.



7 TUBE SUPERHET 719A

Illuminated slide rule type dial, new improved push buttons, unmatched at \$19.99. Foreign wave band added at slightly higher price. Other deluxe table models \$24.95 and \$29.95.



12-lb. PORTABLE B-549A

Operated with AC-DC current or batteries. Automatic switch changes over. Light weight, carry it anywhere. \$24.95 with batteries good for 200 hours or better.



CONSOLE 7739M

7 tube Superhet with NEW CURVE-FLECTOR tone diffuser and improved push button tuning. Domestic broadcast and short-wave for foreign reception. Cabinet imparts rich quality from finely selected woods. A real value at \$49.95. Other consoles also outstanding values at \$39.95.

MEET THE DEMAND

Crosley presents smart developments of built-in aerials—television outlets—simplified push button tuning—features that the public is promised this season!

OFFER MORE INNOVATIONS

with exclusive Crosley Curveflector Tone Diffuser in consoles . . . advanced Crosley automatic switch from batteries to AC-DC current in portable radio . . . Capehart record changer in combination 639M.

GIVE MOST FOR THE MONEY

Every practical radio improvement plus many clever Crosley developments — some solely Crosley — some great advancements on existing features — all backed by 18 years of radio experience and discovery. This is pioneer radio — still out in front with all the advantages that accrue to those who MAKE history.



COMBINATION PHONOGRAPH AND RADIO 639M

Latest type crystal pickup, heavy motor, efficient radio and fine electro dynamic speaker create quality instrument, high fidelity assured. Capehart record changer, new Curveflector tone diffuser. MODEL SHOWN \$114. Other combinations at \$69.95 and \$49.95.



CONSOLE 519M

Massive cabinet, 8 tubes, heavy duty speaker assembled on NEW tone diffusion baffle — the exclusive Crosley CURVE-FLECTOR. Far and away the biggest radio package on the market at the price. Biggest selling single radio item in Crosley's 18 years. \$69.95.



Prices slightly higher in South and West.

CROSLEY

THE CROSLEY CORPORATION

POWEL CROSLEY, Jr., President

Home of "The Nation's Station"—WLW—70 on your dial

CINCINNATI

Locker Storages

Locker Plant Construction Data

Are you thinking of building a refrigerated locker storage plant? Are you faced with the problem of supplying insulation or refrigeration equipment for such a project? If so, the following summaries of the physical properties of a number of locker plants in the state of Tennessee should prove helpful, for herein is given much information on the size and arrangement of these plants, the materials used in their construction, and the type of insulation and refrigeration equipment installed.

Jackson, Tenn.

Owner:
Frozen Food Lockers Co.

Plant:
Building in which this plant is installed measures 100 x 100 feet. Locker room at present has inside measurements of 21 feet 6 inches x 24 feet 10 inches. An adjacent room measuring 18 feet 6 inches x 24 feet 10 inches may be used for a locker room when existing facilities are exhausted.

Installed in the present locker room is a sharp-freezer cabinet 10 feet long, 3 feet wide, and 8 feet high. There are also 300 lockers in this room, with space for an additional 200.

Adjacent to the locker room are pre-chill and chill rooms. Combined length of these rooms is 40 ft. and width is 16 ft. Both rooms are equipped with overhead track, so that meat may be moved from one to the other. California redwood was used exclusively in construction of the refrigerated rooms.

In front of the building are a lobby for patrons and the plant's processing room. In the rear of the building, next to the machine room, is a space approximately 27 x 28 feet which is used as a vegetable and fruit wash room, with one side serving as the entrance for freshly killed meats. The building also is equipped with a 25 x 100-ft. drive-in shed for the convenience of customers.

Insulation:

Locker room has 10 inches of Palco wool in the walls and floor and 14 inches in the ceiling. The pre-chill and chill rooms are insulated with 6 inches of Palco wool in walls and floor and 12 inches in the ceiling.

Refrigeration equipment:

Thirty 12-in. x 12 ft. Frigidaire vacuum plates are installed in the

locker room. Eight 9-ft. x 22-in. Frigidaire sharp-freezer plates are installed in the sharp-freezer. This equipment is connected to one model FE50 Frigidaire compressor powered by a 5-hp. motor. Connected to this compressor is a model EC16 evaporative condenser.

The pre-chill room is equipped with two model C-820 Frigidaire forced air units, as is the aging room. These units are connected to a model FE6J Frigidaire compressor, a 3-hp. job. This compressor also is hooked up to a model EC2 Frigidaire evaporative condenser.

Between the processing room and the patron's lobby is a 12-ft. all-porcelain double-duty Koch meat counter equipped with a 1/2-hp. Frigidaire air-cooled compressor (model AF-250), and a model P60A Frigidaire frozen food dispensing cabinet.

Dyersburg, Tenn.

Owner:
Frozen Food Lockers Co.

Plant:
The building erected to house this plant contains a locker room measuring approximately 30 x 24 x 12 feet, in one corner of which is a sharp-freezing cabinet. Pre-chill and aging rooms combined are approximately 25 feet long, 8 feet wide, and 8 1/2 feet high. Redwood lumber was used exclusively in the construction of these rooms. The plant also has a complete processing room, a lobby, and an office. Three hundred lockers are installed at the present time, and space is available for installation of another 300.

Insulation:

Locker room has 10 inches of Palco wool in walls and floor, with 14 inches in the ceiling. Pre-chill and aging rooms have 6 inches of this same insulation in walls and floor and 10 inches in the ceiling.

Refrigeration equipment:

Twenty-eight 12-ft. x 12-in. Frigid-

aire vacuum plates are installed in the locker room, while the sharp-freezer cabinet is equipped with eight 6-ft. x 22-in. Frigidaire conduction freezer plates. This equipment is connected to one model FE62K Frigidaire 5-hp. compressor, which in turn is connected to an EC2 Frigidaire evaporative condenser.

The chill room and aging room are cooled by two model C-820 Frigidaire forced air units connected to an FA4100 Frigidaire compressor, a 1-hp. air-cooled unit.

Brownsville, Tenn.

Owner:
Moody & Davis

Plant:
Located in the rear of the Joe Moody grocery store, this plant has a 26 x 15 1/2 x 10-ft. locker room, in one corner of which is constructed a quick-freeze room with interior dimensions of 27 1/2 x 7 x 7 feet. The chill room has an overall dimension of 26 x 10 x 9 feet, with a division 8 feet from the end of this room forming the pre-cooling compartment. Both pre-cooling and chill rooms are constructed of California redwood. At present the plant has 200 lockers, with room for an additional 100.

Insulation:

Locker room has 8 inches of Palco wool in ceiling, floor, and walls. The two walls of the quick-freeze room which are exposed to the locker room have only 4 inches of Palco wool insulation, while the other two walls have 8 inches. The chill room has 6 inches of Palco wool in walls, ceiling, and floor.

Refrigeration equipment:

Twenty 140 x 12-in. Doleco vacuum plates in the locker room, six 72 x 22-in. Doleco plates in the quick-freeze room, one model C-820 Frigidaire forced air evaporator in the chill room, and one C-400 Frigidaire forced air evaporator in the pre-cooling compartment are hooked up to an FE62K Frigidaire compressor with a 5-hp. motor and a Frigidaire EC2 evaporative condenser.

Memphis, Tenn.

Owner:
Frozen Food Lockers Co.

Plant:
This plant is located in the Curb Market here. Its locker room is 40 feet long, approximately 23 feet wide, and has a ceiling height of 10 1/2 feet. It is equipped with 606 lockers, and has a sharp-freezer built into one corner of the room. Pre-chill and aging room is approximately 27 x 15 feet.

The plant's commercial sharp-freezer cabinet measures roughly

Clever Promotion and Long Distance Delivery Aid Nebraska Locker Plant

22 feet long, 7 feet wide, and 10 feet high, and is capable of freezing approximately 8,000 lbs. of produce per day. The general commercial cold storage room measures 30 x 23 x 10 1/2 feet.

A completely equipped chicken killing plant and a vegetable processing in addition to the regular processing room, are also connected with the plant. California redwood lumber was used in the construction of the refrigerated rooms.

Insulation:

Palco wool.

Refrigeration equipment:

Locker room has 34 12-ft. x 12-in. Frigidaire vacuum plates. The sharp freezer in the locker room is refrigerated by eight 22-in. x 9-ft. Frigidaire conduction freezer plates, and the commercial sharp-freezer by 64 such plates. Frigidaire compressors having a total connected load of 40 hp. will operate the plant.

Nashville, Tenn.

Owner:
Franklin Road Locker Storage Co.

Plant:
Cinder and concrete block building with capacity of 660 lockers, only 300 of which have been installed. A quick-freeze cabinet is located in the locker room. Plant is equipped with cattle slaughtering and chicken dressing room with scalding vats and steam boiler, and operates a retail meat market. Investment—\$16,000.

Refrigeration equipment:

Baker brine spray cooling unit in locker room with air blast connected to the quick-freeze cabinet. Baker ceiling-type cooling unit for chill room. Refrigeration furnished by two Baker four-cylinder 3 1/2 x 3 1/2 ammonia compressors, shell-and-tube condensers, receiver, motor driven water pump, atmospheric type cooling tower, and thermostatic and low pressure controls. A refrigerated display case is located in the meat market.

Murfreesboro, Tenn.

Owner:
Jones Cold Storage Locker System.

Plant:
Building constructed of 12-inch cinder and concrete blocks. In addition to lockers, the plant has 0° F. storage facilities for 450,000 lbs. of cracked eggs and butter. Slaughtering facilities with hog scalding vat and steam boiler also are available, and the plant operates a retail meat market. Investment—\$35,000.

Refrigeration equipment:

Baker brine spray unit in locker and storage rooms, Baker special brine spray unit freezing machine in sharp-freezer and Baker ceiling-type blower unit in chill room connected to two 6 1/4 x 6 1/4 Baker ammonia compressors with shell-and-tube condenser, receiver, atmospheric cooling tower, motor driven water pump, thermostatic low pressure controls. In addition, there is a refrigerated display case in the meat market.

SCOTTSBLUFF, Neb.—The value of refrigerated locker plants must be thoroughly sold to prospective users, not only through trick slogans and offers but also by means of practical demonstration through actual services rendered, believes Otto R. Doerfler, operator of the Thrifty-Way super market here. And Mr. Doerfler uses both methods to stimulate interest in the locker storage service which he maintains in connection with his store.

Surface of the potential-user market for the Thrifty-Way lockers has hardly been scratched, he explains. User education is one of the primary essentials of locker plant operation, but it takes consistent and well planned effort to get results from such educational programs.

One way in which Mr. Doerfler drew attention to his locker service was by advertising through a mimeographed circular a free bushel basketful of staple and fancy groceries to anyone bringing in a new locker renter. Persons renting lockers of their own accord were given credit for their own patronage and thus made eligible to receive one of the free baskets of groceries. These baskets were uniformly stocked with samples and bulk groceries at a cost to the store of \$1 each.

Mr. Doerfler reports that this stunt worked out very satisfactorily, 50 new locker customers being obtained.

RADIO BROADCASTS USED

A series of radio broadcasts featuring testimonials of locker users also was used. Another move in the Thrifty-Way educational program was to reproduce in mimeographed circular form some statements from a government bulletin on savings made possible through locker service.

"Price appeal" also is an important factor in the Thrifty-Way promotion scheme. The market's advertisement on the back of the North Platte (Neb.) telephone directory offers locker service as low as \$5 a year. A huge sign painted on one side of the market building does the same.

When customers come in to inquire about these low-rental lockers, however, Mr. Doerfler does a real job of selling up. Almost invariably he convinces the prospect that the \$5 locker is too small for his needs, and ends up by renting him one at a higher price.

Rental for the lockers is required to be paid in advance, and when the rent becomes due a notice is put on the customer's locker. If a customer should disregard two such notices, Mr. Doerfler simply padlocks the locker and thus forces the customer to contact the management.

Outstanding service offered by the Thrifty-Way plant is its meat delivery service to patrons living as far as 75 miles distant. These customers merely drop a postcard to the market giving instructions to ship certain meats from their lockers at a certain date. Sometimes customers even telephone their requests. The market then puts the meat on the next train out, and the customer has his meat within an hour or two.

For a Big Business drive . . . put these cool veterans up front

Bush Replacement Condensers

JOBBERs—Build your REPLACEMENT CONDENSER sales with this attractive store display. Write for full details TODAY!

For sure-fire sales results depend on the popular BUSH line of Replacement Condensers—specified by many of the country's largest manufacturers of domestic and commercial compressors because of proved performance and below average costs.

Bush Air Cooled Replacement Condensers are made of brass fins on 3/8" O. D. copper tube. The entire unit is hot solder dipped after fabrication to give a protective coating and fine finish not obtainable by any other method. All models equipped with top plates.

Bush Counterflow Water Cooled Condensers are ideal for replacements or boosters on air or water cooled jobs. Made of 3/4" O. D. copper outside tube and 1/2" O. D. copper inside tube. All connections hard soldered.

The new Bush Replacement Condenser folder gives specifications and prices for a wide range of sizes. Write for your copy.



This Sign Spells Service

ANSUL JOBBER

Service, and Quality as well. You can expect both without question from your nearby Ansul Jobber. No manufacturer can say this with greater assurance—in his own products and in the integrity of his distributive organization.

ANSUL SULPHUR DIOXIDE
METHYL CHLORIDE
ANSUL ICE-X

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

LET THE ANSUL JOBBER NEAR YOU SERVE YOU BETTER

Commercial Refrigeration

Philadelphia Dealers Promote Commercial Sales Cooperatively

PHILADELPHIA — To promote commercial refrigeration activity in this territory, member firms of the Philadelphia Electrical Association who are engaged in commercial refrigeration, together with representatives of the Philadelphia Electric Co., have organized a commercial electric refrigeration division.

First activity of the new group was the mailing of a broadside to 1,000 selected customers, while as a follow-up, a second publicity piece was delivered personally by salesmen of the utility's retail sales department.

A good return on leads was developed, it is reported, and all the leads are being distributed in rotation to cooperating members of the Electrical Association.

Gloekler Offers Choice Of Coils In New Model

ERIE, Pa.—First model of the 1940 line of Gloekler commercial refrigeration units to be announced by Gloekler Mfg. Co. here is a new utility reach-in case with double doors, a capacity of 25 cu. ft., and a shelf area of 35 sq. ft.

This refrigerator is available with a back wall cooling coil or with a combination cooling coil and ice cube maker. Condensing unit is mounted in the base, and the unit is shipped complete, ready to plug into any electric outlet.

Streamlined in styling, this new Gloekler case is of all-steel construction, and has a three-coat "Dulux" finish, white porcelain floor, chrome plated hardware, full height service doors, rock wool insulation, and a recessed base. It occupies about 9 sq. ft. of floor space.

Carrier Adds Frosted Foods Display Case

SYRACUSE, N. Y.—A new display case for use in merchandising frosted foods is the latest addition to the Carrier line of commercial refrigerating equipment.

Display of foods in the case is visible through a plate glass window, from which, it is claimed, fogging has been eliminated through special dehydration between the plate glass, preventing formation of condensation.

Space to list 30 frosted food items is provided on the front of the case, and additional space over the glass display allows for the featuring of four "daily specials."

Height of the case has been limited to 50 inches, to conform with other standard food equipment. Cards placed on back of each compartment door provide a quick means of ascertaining just where each type of food is stored.

Storage space in the cabinet is provided for 375 packages on trays which are removable to get at any section of the interior. No food is stored on the floor of the cabinet.

Condensing unit is located out of sight within the case, and need only be plugged into an electrical socket to be ready for operation. Cabinet itself is 60 inches wide and 33 inches deep.

Storage Plant Planned Near Freight Depot For Frozen Foods

CHEYENNE, Wyo. — Work has been started on construction of a \$10,000 cold storage plant at the Union Pacific railroad freight depot here to provide Cheyenne shippers with a place in which to hold frozen foods and other perishables until they can be removed to trains or business establishments.

The plant will be 46 x 16 feet and will cover much of the available storage space in the freight depot.

Fedders Blower Unit Solves Problem of Space In 'Diner'

AKRON, Ohio—Where space is at such a premium as in a dining car, compactness is one of the primary requirements of any piece of equipment, and that is why a Fedders wall-type unit cooler was selected to refrigerate the storage box in Bob's Diner here.

Modern design and simplified installation of this self-contained cooling unit left maximum space available for shelving and food storage. The baked white enamel finish applied over a heavy coat of rust-proofing made the cooler as easily cleaned as the rest of the storage case.

The entire cooling unit, including motor, fan, and cooling element, is built into a ruggedly constructed cabinet. Bottom of the cabinet forms an integral drain trough equipped with connection to remove condensate. A Fedders heat exchanger is standard equipment.

The unit cooler was supplied to McCoy Cabinet Co. by Pfarr & Hobart of Akron.

August Nema Commercial Sales Close To July Totals

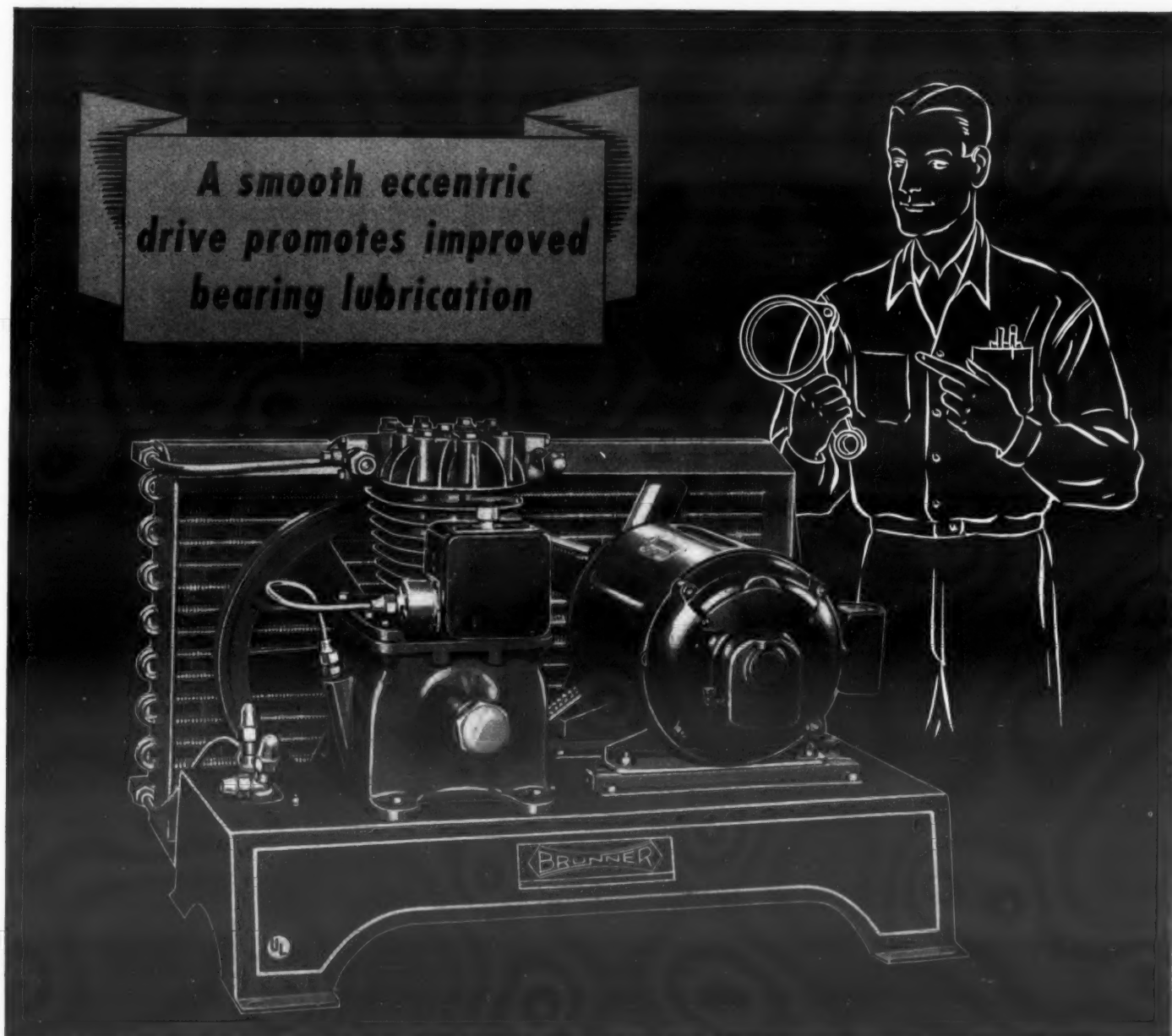
The following report of commercial refrigerating equipment sales for August, 1939 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 16 companies:

Baker Ice Machine Co., Inc., Brunner Mfg. Co., Carrier Corp., Crosley Corp., Frigidaire Div. General Motors Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Merchant & Evans Co.,

Norge Div. Borg-Warner Corp., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Vilter Mfg. Co., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR AUGUST, 1939	Domestic		Canadian		Other Foreign		Total World	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete.....	413	\$ 29,104	2	\$ 111	15	\$ 948	430	\$ 30,163
2. Pressure Water Coolers—Complete.....	1,722	173,308	31	2,710	55	5,505	1,808	181,523
3. Water Coolers—Low Side Only.....	109	9,917	1	42	2	97	112	10,056
4. Ice Cream Cabinets—Complete.....	1,496	250,407	56	8,579	57	9,196	1,609	268,182
5. Ice Cream Holding Cabinets Only (Remote).....	150	20,782	1	139	2	269	153	21,190
6. Bottle Beverage Coolers—Complete.....	1,725	176,502	51	4,290	72	8,117	1,848	188,909
7. Beverage Coolers (No High Sides).....	87	10,014	.....	.....	1	47	88	10,061
8. Milk Coolers—Complete.....	8	1,483	.....	.....	1	138	9	1,621
9. Milk Cooling Cabinets (No High Sides).....	2	281	.....	.....	.....	.....	2	281
10. Commercial Evaporators—Not Reported Above (Including Cold Diffusers, Brine, and Other Spray Evaporators, Etc.).....	2,628	104,813	97	2,795	516	22,775	3,241	130,383
11. Condensing Units Less Than 1/4 Hp.....	1,285	55,075	34	1,854	349	11,796	1,668	68,725
12. Condensing Units—1/4 Hp.....	1,971	126,606	35	2,127	292	20,777	2,298	149,510
13. Condensing Units—1/2 Hp.....	1,591	137,893	28	2,595	168	15,555	1,787	156,043
14. Condensing Units—3/4 Hp.....	906	95,627	19	2,254	83	9,545	1,008	107,426
15. Condensing Units—1 Hp.....	553	72,893	8	1,143	58	8,559	619	82,595
16. Condensing Units—1 1/2 Hp.....	304	51,525	5	859	79	14,283	388	66,667
17. Condensing Units—2 Hp.....	154	28,390	2	406	22	5,058	178	33,854
18. Condensing Units—3 Hp.....	74	20,335	1	248	28	5,304	103	25,887
19. Condensing Units—5 Hp.....	27	8,293	1	425	3*	1,216*	31	9,934
20. Condensing Units—7 1/2 Hp.....	6	4,165	.....	.....	2	1,000	8	5,165
21. Condensing Units—10 Hp.....	8	5,602	.....	.....	1	597	9	6,199
22. Condensing Units—15 Hp.....	8	5,702	.....	.....	2	1,337	10	7,039
23. Condensing Units—20 Hp.....	1	988	.....	.....	.....	.....	1	988
24. Condensing Units—25 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
25. Condensing Units—30 Hp.....	8	20,012	.....	.....	.....	.....	8	20,012
26. Condensing Units—40 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
27. Condensing Units—50 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
28. Total—All Condensing Units (11 to 27).....	6,896	633,106	133	11,911	1,087	95,027	8,116	740,044
29a. Condensers—Sold Separately	.....	.....	.....	.....	.....	.....	.....	.....
Shell & Coil or Shell & Tube.....	3	710	.....	.....	.....	.....	3	710
29b. Evaporative Type.....	144	7,358	77	2,897	.....	.....	221	10,255
30. Total All Commercial Refrigeration.....	.....	\$1,417,785	.....	\$33,474	.....	\$142,119	.....	\$1,593,378

*Includes sales and credits



Every Brunner Unit is tested for Underwriters' Laboratories Approval and Carries the U. L. Seal

Silence—that perhaps is the most noticeable feature of the Brunner eccentric drive. For here is a design which takes the noise out of commercial refrigeration, reduces it to a gentle purr. But along with this smoothness of operation comes another important advantage, *improved lubrication*. The eccentric drive efficiently moves the lubricating oil to the bearings, because the straps are always submerged in crankcase oil. There is no excessive agitation of the oil, and the oil does not leave the

case. Naturally, there is less oil traveling around the system—it's in the crankcase where it belongs... Why not take advantage of design superiorities like these—superiorities which extend throughout the Brunner construction and spell long-term dependability? A technically trained factory representative will explain the Brunner equipment best suited to your requirements. Refrigerating and air conditioning units, air and water cooled, from 1/4 to 15 H.P. Brunner Manufacturing Co., Utica, N.Y., U.S.A.

The Symbol of **BRUNNER** Dependability

Service News

Production Line Repair Service Operates on Flat Rate Exchange Basis; Offers Service Man More Time For Selling

By Robert M. Price

DETROIT—Refrigeration repairs are an "across the counter" transaction at the Lee-Sparling Co. here. The firm specializes in "service for service men," exchanging reconditioned units and parts at a flat rate, and maintaining a continuous supply of repaired parts on a factory production line system. No outside repair work is handled, and no competition is offered to the independent service man who serves the user.

The firm's exchange policy on refrigeration repairs saves the service man time and money, declares Edward C. Lee, manager of the company, because the service man can spend more of his time on selling, instead of on routine repair jobs, and so realize a higher income. Mr. Lee believes that the average service man cannot make a satisfactory living on service work alone.

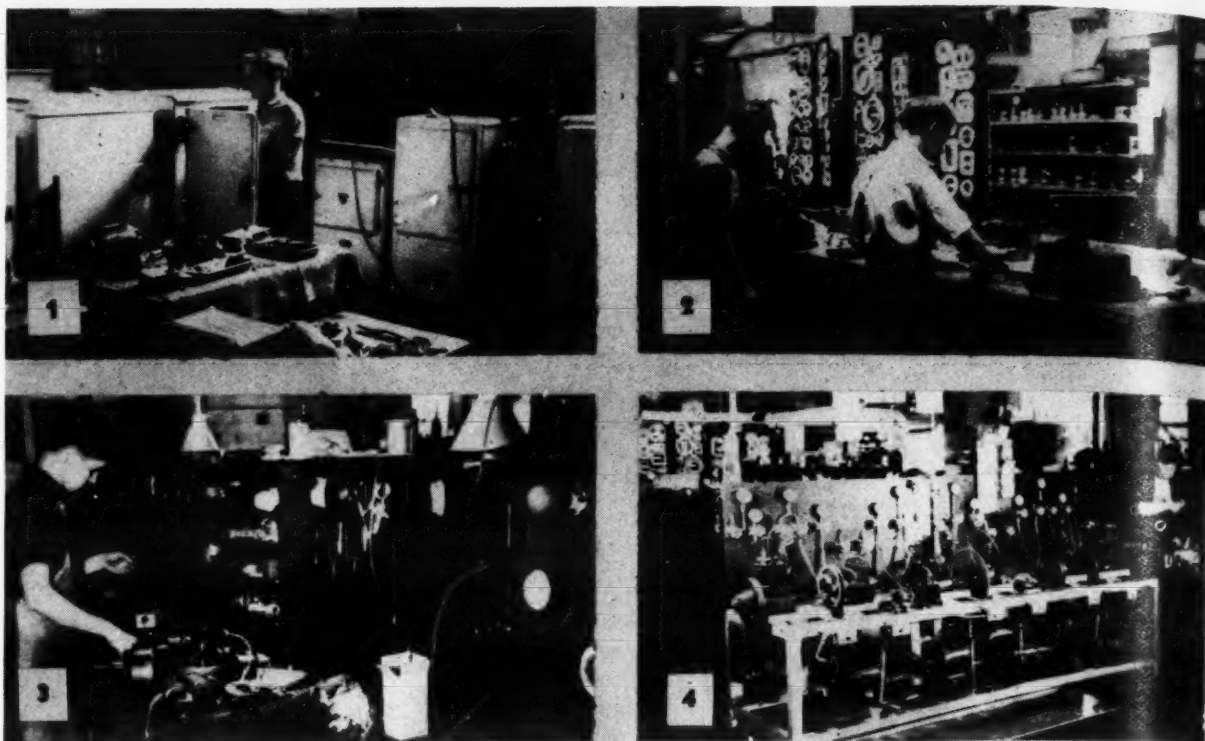
Very often, he pointed out, the service man does not have the proper equipment to make first-class repairs

on every unit or part that he is called upon to fix. If the repaired unit breaks down again, there is an added expense that further eats up the profit. Most important, he says, is the time that is consumed on small repair jobs. Many service men don't figure the adequate worth of their time. For instance, if a man goes out on a job that is worth a few dollars, spends all his time on repairs, he winds up with a poor return for the time spent on the job.

If the repair man had the time to sell replacement parts or new units, time to solicit new accounts and new business, his time would be worth much more, in Mr. Lee's opinion.

Most of the work is done for large independent service organizations or independent service men. Work on reconditioning used boxes is handled for small appliance stores and department stores. About 75% of the work is on household units, and the remainder on commercial.

Servicing For the Service Man In Repairs 'Factory'



1.—Reconditioning used household refrigerator cabinets. Mechanical parts, cabinet fixtures, and finish are reconditioned in the shop. 2.—One stop on the production line. Here the men are fitting piston pins, checking piston valves, piston rings, and refitting the piston in the cylinder. On the rack above them is a complete set of compressor gaskets to 1-ton capacity. 3.—Checking alignments with special machine. This man checks piston assembly, and has line reamers for piston and connecting rod reaming. He employs two sizes of lathes in his operations. 4.—The compressor test rack. Here the reconditioned compressor is tested for efficiency, noise, valve seal, and body leaks. The motors are mounted on an adjustable spring base, so that any size compressor can be tested. Compressors are further tested for seal and gasket leaks in a pan tank.

The exchange units supplied are guaranteed for a year against mechanical defects, freeing the service man from expensive call-backs during that period. The supply of complete units and parts is maintained at all times to insure quick service. These parts are kept in racks in back of a counter, and it is only necessary for a service man to bring in his defective unit or part, receive a guaranteed one in exchange, pay the exchange fee, and he's off. The flat rate of exchange is maintained for regular customers only, Mr. Lee explained, and in this way the company is protected against taking in a real "lemon" that is beyond repair.

17-MAN LINE

After the part is taken in exchange it goes into the "repair factory" to be reconditioned. There are 17 men working in the production line, and repairs are made just as the parts were originally built and assembled in the factory. This system insures speed, accuracy, and allows complete inspection of the finished job. Mr. Lee at one time worked in the manufacturing end of refrigeration, with Abspure Refrigerator Co. and Universal Cooler. He adopted the same methods in his own business.

The part or unit to be repaired moves from one man to the other, each man specializing on one function of the repair. Three rows of tables form the production line, and machinery is so arranged as to make the operations as simple as possible.

WHAT'S DONE ON THE LINE

A compressor, for instance, starts on the line by being dismantled. The parts are washed and the gaskets cleaned. Defects in parts are noted. Next the bearings are checked and the connecting rods are refitted. Piston rods are refitted and the valve is reworked. After the compressor goes through the repair line, it is assembled, and the proper amount of oil added.

It next goes to the test bench, where it receives a complete test for efficiency, valve, seal, and body leaks. A series of gauges make these checks. This bench has a spring arrangement on the motor mountings, so that any size or make of compressor can be tested by adjusting the spring. An additional test for seal and gasket leaks is made in a pan tank. The unit is then repainted and put in the rack for exchange.

In the back of the shop there is a section given over to the reconditioning of used cabinets. Here the finish is repaired and painted. A small room is used for spray painting. The complete reconditioning of household refrigerators is a minor part of the business, however. Mr. Lee explained that in order to make a fair profit on this operation a large volume was needed.

A large dehydrating oven is part of the equipment. Here all parts and

units can be dehydrated in a short time. The oven is large enough to receive very large industrial coils.

The personnel of such an operation must be carefully trained and geared to the production system, says Mr. Lee. Most of the men he has are young, and are put through a training period which completely familiarizes them with all the operations. Each man, however, does a specialized job, although he is able to and may move from operation to operation. They are all paid on an hourly basis.

APPRENTICE TRAINING

The apprentice is first put at tearing down a compressor or other parts, in order to become familiar with the workings and parts of the units. He then is trained in some specialized repair operation, and finally learns all operations.

It is necessary, Mr. Lee said, to have well-trained men, because it is necessary to keep the efficiency on the rise in order to keep costs down. His profit depends largely on the ability to make the cost for any repairs as low as possible. Questioned on the application of time and motion studies to his operation, he explained that it was nearly impossible, because of the variety of repair operations handled by the same man. Mr. Lee himself acts as "factory foreman" to keep the operations moving along.

PRICES AND COSTS

Prices were at first based on competition, but have been revised to suit this firm's individual operation and to cut losses caused by outright competitive pricing wherever possible. The effect of sealed units on service organizations is recognized by Mr. Lee, but he feels that the company that can do good work cheaper than the manufacturer's replacement service will get its share of the sealed unit repair business.

A check is kept on the cost of making repairs by means of a card checking system. On this card is a list of the parts to be repaired. On the back is kept a record of the time and material used on the repair job. If a customer wishes to have his own unit repaired and returned, this card allows a closer check to be made for charges. On the exchange system, the unit turned in must be the same as the one given in exchange.

SERVICE MEN CAN SELL

Mr. Lee reports that in the four years that he has had this business the increase in service organizations making use of his wholesale repair service has been indication that the service man can make more by "farming out" the repair work he once labored over with a loss. Although Mr. Lee's company prides itself on its mass production system, he says that a good job is more important than mere volume. And because he does good jobs—guarantees them—they are his only method of advertising.

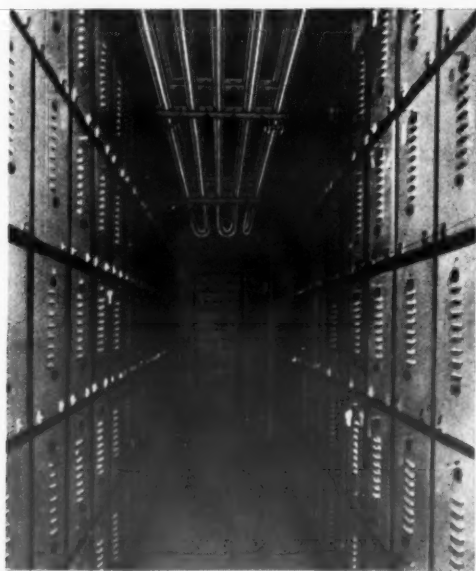


MANHATTAN V-BELTS

Customer Builders . . .

Trouble-free drives because they are built for steady service. Exclusive construction—endless whipcord strength member completely floated in rubber and placed in the neutral axis—resists destructive internal heat, stretch and side-wear. Thus, they remain flexible, strong, smooth running, noiseless.

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of Raybestos-Manhattan, Inc.
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Ask Rempe for the answer to your problem on Locker Plant Coils

—when it comes to locker plant installation data EXPERIENCE COUNTS MOST!

REMPE COMPANY
340 N. Sacramento Blvd., CHICAGO

Wolverine Tubing is Clean!

WOLVERINE TUBE COMPANY
1413 CENTRAL AVENUE DETROIT, MICHIGAN



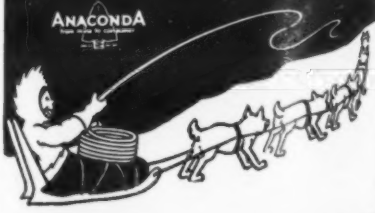
Edward C. Lee, right, sells refrigeration repairs "across the counter" to service men.



Repairing float valves is this man's special duty. Each man on the "line" performs one function as parts come through.

Anaconda Copper Refrigeration Tubes

Unusually long lengths!



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

PERSONALITIES

By George F. Taubeneck

Post Mortem

Last week's Post (Saturday Evening) was pretty widely read in the refrigeration industry. Your correspondent, who covered a thousand miles and five cities after it appeared on the newsstands, found it on the desk of every man he visited—and conversation stemmed from it every time.

Reason: "The Crosley Touch—and Go!" by Forrest Davis, in that issue. It tells quite a lot about the almost-fabulous Powel Crosley, Jr., president of the Crosley Corp., and father of the Crosley radio, refrigerator, range, washing machine, bottle cooler, automobile, mechanical hair grower, et multum cetera.

It's a darned interesting story, and well told. Much of it will be familiar to readers of the NEWS; on the other hand, a great deal of the early-back-ground story will be new.

Midas Touch

Quite a bit of interesting addenda could be appended to this story, however. For example, we give you a brand new instance of the Crosley "luck," the "Midas touch" which so fascinates author Davis.

The Crosley car, Davis pointed out, has been received with considerable shaking of heads by automobile "authorities." Small cars just don't sell in the United States. Maybe this will be one of Crosley's strike-outs.

Crosley had admitted that the odds are against him on this venture. And after he had sold 5,000 of them this summer, he closed up shop, quite satisfied. That was a pretty good start, he thought; now to get ready a 1940 model for the automobile shows in the fall.

But see what happened: War is declared in Europe. Gasoline is rationed to private automobiles. Midget cars—already most popular in Europe—become the rule. There is an immediate demand for thousands of them.

However, the chief sources of supply (DKW in Germany, Fiat in Italy, Austin and Morris in England) withdraw from the market. They're busily making airplane motors, and tractors and tanks.

So, Crosley is deluged with orders for his little car—sight unseen. South Africa, South America, India, Malaya want it too. They had been driving Morris and Fiat "kiddie cars," but could no longer get them. They had to turn to Crosley.

It would appear as if Crosley could establish himself almost overnight in the export market, which is a proved market for tiny cars. Years of expensive promotion have thus been saved.

The Shelvador

Another yarn that bears retelling is that of the Shelvador. Frank West, one of the industry's leading inventors, had patented this idea (it had been suggested originally by his wife).

He peddled it to one after another of the big manufacturers. Their engineering staffs couldn't see it at all. Frank became discouraged. Finally, he began a glum round of the small producers.

Although Crosley was then the leading radio manufacturer in the world, his refrigerators were practically unknown. It takes time to build volume in this industry, and Crosley had sold only 25,000 units in his first two years.

Nevertheless, Frank took the idea directly to Powel. He saw its possibilities instantly, and offered Frank 50 cents a box royalties, or \$35,000 cash.

Frank was almost speechless with joy. He chose the \$35,000. Powel made out the check then and there—the whole transaction requiring less than half an hour.

The Shelvador was a sensation. Crosley refrigerator sales zoomed to 50,000, to 100,000, to 150,000. Crosley was definitely big-time in refrigeration now—without having to wait the usual period of years, or spend the customarily astronomical sums

to build public acceptance. Had Frank chosen the 50-cent royalty deal, he'd be eating caviar, and strawberries with cream—extra heavy.

As it was, he deposited the check in a Detroit bank, which promptly closed its doors!

The Hard Way

Easterners who read the Post article will find it hard to understand the attitude of the Cincinnati man-in-the-street toward the hometown boy who made good in such a big way.

As Davis reports it, some of the good burghers resent his success, some call it luck, and many are members of the "I-noo-im-wen-club." At the Reds ball park he has been booed vociferously, according to Davis.

"But why?" Easterners will protest. "Hasn't he given them a winner? Weren't the Reds in last place when he took over, and haven't they just won the National League championship for the first time since 1919, and the second time in Cincinnati history?"

"And hasn't he created a tremendous industry, giving work to thousands of Cincinnati citizens and bringing millions of dollars to the town? And isn't he a lavish spender, a notable sharer of the wealth?"

Sure. Right. And logical. But middle westerners—especially German communities, of which Cincinnati is a prime example—have a different yardstick. They don't resent success if it comes the hard way. Here's the formula:

You start young, work very hard, save your money, live soberly, and stiffly, and in your old age you may be reasonably well rewarded. Then your son carries on, and finally your grandson becomes a rich man. (The great-grandson, of course, gets rid of it fast in multiple alimony and at the race tracks, while the great-granddaughter marries an importunate count and takes her share of the swag to the Riviera.)

Crosley didn't follow the pattern. He played around too much and still does. He never "settled down." He was not a sterling example to German youth. Things came to him too easily. They could never understand his success—hence they resented it.

Show Business

Powel Crosley, Sr. was rated as a millionaire. He made money quite rapidly in land in the development of subdivisions in Cincinnati, Lima, Ohio, and Duluth.

In 1893, in the panic, he lost a large part of his fortune. Having most of his money invested in real estate development in Duluth, he continued with his law business, and had a perpetual lease on the old Pike Opera House building, where the Hotel Sinton now stands.

During the formative period of his life Powel's father virtually owned and operated the Pike Opera House. Powel, Jr. went to the theater quite regularly up until about 1903 (when the Pike Opera House building burned) and acquired a fondness for the theater which continued afterward.

He had a rather good opportunity to study shows from the front of the house, and to learn about the business operations of the theater from hearing his father talk. Thus he learned what constituted good box office attractions, what the public wanted.

"I always knew what every show was doing from a box office standpoint and then was able to see the show and judge it unconsciously," recalls Mr. Crosley. "I think I learned something in those years of what the public likes in the way of shows and amusement."

"I saw the first vaudeville that ever came to Cincinnati at the Pike Opera House where it was played for several years. I also saw the famous Pike Stock Company, the first to make its appearance in Cincinnati."

"I saw Byron Douglass, Lizzie Hudson Collier, Hershell Mayall,



Powel Crosley, Jr. became a figure of national interest last week on two counts. First, the Saturday Evening Post published a biographical sketch of Mr. Crosley. Second, his Cincinnati Reds won the National League baseball championship in a thrilling finish. Snapshots by the editor.

Edythe, Mayo, Chapman, James O'Neil, Hobart Bosworth, and dozens of others who made their appearance in moving pictures. Of course, I heard the concerts that came, performed by such noted artists as Paderewski and others.

"I think that unconsciously this formed a groundwork that was helpful in later years in the broadcasting business, in being able to direct or steer the type of programs that in a general way has made our broadcasting activities successful."

"While I have never gotten out

and operated the stations or had contact in building the shows on the stage, I have been able by keeping some perspective, to criticize when trends apparently were running too strongly in one direction and the program was getting a bit out of balance one way or the other."

Normal Childhood

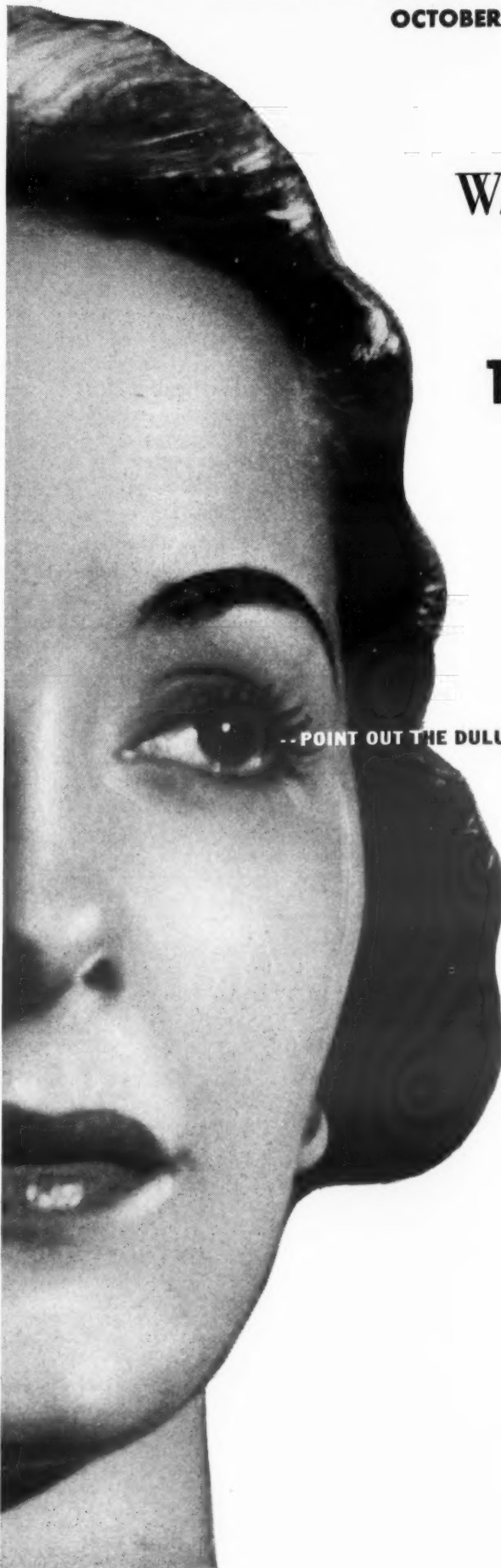
"I was brought up as a perfectly normal kind of a kid, I think," Mr. Crosley continues. "We moved to the country when I was six years old.

That was while my father's law business was in Cincinnati. My grandfather was in another business in Cincinnati. We lived on a simple country place and had an opportunity to see how things were raised."

"I always had my own little patch in the garden and was taught to plant the seed and keep the weeds out, which probably was done about as well as most boys do it."

In an early issue "Personalities" will continue with stories about Crosley which did not appear in the Saturday Evening Post article.

GET IN ON THE RUSH FOR EXTRA PROFITS DURING NATIONAL WASHER-IRONER WEEK!
OCTOBER 14-21, 1939



When housewives are thinking
in terms of less work...

TELL THEM ABOUT DULUX!



WITH National Washer-Ironer Week focusing the attention of Mrs. America on work-saving appliances even more sharply than ever... DULUX will be an even more powerful sales tool for you!

For DULUX has the qualities women want! It is lovely to look at, easy to live with. On washers, and on refrigerators, DULUX keeps its sleek, sparkling whiteness, in spite of hard household service. Its smooth surface is as easy to clean as a china dish. Yet the tough DULUX film is resistant to chipping, cracking, food stains, alkalis and soaps.

In short, DULUX is the modern finish for modern living. Its work-saving qualities will help you sell appliances faster! E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.



The Modern Finish for Modern Living
...IT SAVES WORK

AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office; Established 1926 and registered as Electric Refrigeration News

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OCTOBER 4, 1939

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Small Home Era

BUSTLES are coming back. But that's no indication that big houses are. The small home—which has become an efficient machine for living, instead of an opportunity for ostentation—appears to be here to stay.

One of the fruits of the Depression was the fall-from-favor of the big automobile and the big house. Up until 1930 the size of his house and his car was considered the index to an American's fortune. But all that's out now.

In the first place, Americans who do have bank accounts realize that it's smart not to brag about them. In the second place, they realize all too well the ephemeral nature of wealth, and the need for keeping that wealth in some negotiable form.

Big Houses & Big Cars Aren't Negotiable

Big houses and big cars are not negotiable. We found that out during the depression. You couldn't sell them "for love nor money." And they ate themselves up (and the owners, too) in operating expenses and taxes. So today, the Cadillacs and Packards are light, compact, and relatively small. And the houses? Well, you should see the new ones. (The old mansions are being crushed by wreckers, to save taxes.)

Of course, comparatively few new homes have been built in the last eight or nine years. But those that did go up were almost invariably compact, 5-or-6 room affairs. They were neat and attractive, and in their modest way, set a new style note.

How the FHA Has Furthered Small-Home Acceptance

Today this fashionable acceptance of the compact home is almost becoming a legal mandate, for it has been embraced by the Federal Housing Administration, which holds the reins on all home building in the country today.

By virtue of its 4½% mortgage loans, the FHA is called in on practically every deal for a new home today. And, like most government agencies, the FHA likes to be boss. Before it will

extend its valued credit, the applicant must be approved, and his plans. No "jerry-built" homes, decrees the FHA. And no homes too extravagant for the owner's income.

Most of the houses they finance are put up by families with incomes ranging from \$1,500 to \$3,000. So the homes usually fall into some such price classes as these: \$3,280, \$4,500, and \$5,950 (roughly, twice the annual income of the family).

Even Larger-Income Families Are Following the Trend

By necessity, these must be 5-or-6 room houses. Now, then: suppose a family with an income of \$10,000 per annum wants to put up an \$18,000 home—one with, say, eight rooms. Well, no, the FHA frowns; it would be out of place in the rest of the development. Better make it six rooms and a fancy doodad or two.

As a matter of fact, plenty of \$8,000 homes are going up, and occasionally one at \$10,000 or \$12,000—but they, too, are generally 6-room houses. The victory of the small house is practically complete.

Room Sizes Standardized In These Compact Homes

An even more interesting tendency is *standardization of room sizes*. Formerly, the measurements of rooms were dictated by the whims of the owners. But no longer, under the FHA. Dining room, living room, and bedroom are likely to have almost the same cubical content.

What's more, this cubic content will be found to be very similar to that of the new house across the street, those down the street, and those on the other side of town.

These new-style homes have smaller rooms, too, with lower ceilings. And they are usually well-insulated.

Means More Money To Buy Labor-Saving Appliances

What does this highly significant trend mean in terms of appliances? It means more money to buy them, in the first place. It means, too, that appliances must be designed for compactness and simplicity.

Because the small homes require a minimum of furniture, are taxed moderately, and are relatively inexpensive to operate, the proud new owners are in an excellent position to install all-electric kitchens and home laundries at the outset, and many of them do.

The salesman on the track of this business should realize that the pride of possession formerly expressed by the number of rooms in a house can now be expressed by the number of modern appliances in the home.

May Open Up Home Market For Air Conditioning

And air conditioning? The small home era should be a god-send. Air conditioning hasn't been able to crack the home market before, but it should now.

Home air conditioning hasn't caught on because it has seemed uneconomic—too much equipment for too few people. To spend \$2,000 or \$3,000 for equipment to condition the air in seven or eight



rooms of assorted sizes—and just a couple of women rattling around in them all day—well, men just couldn't see it.

Stores and offices, now, that was different. They were thickly populated and had a turnover. Some sense to that.

Small Unit Conditioners Provide Key To Puzzle

But with the new small homes, of more or less standard-sized small rooms, you have the key to the puzzle. And that key is: small unit conditioners.

One \$150 window-type room cooler—of the type sold in such surprising volume this year—will handle one of these new-type living rooms, and handle it well enough. Another will take care of the master bedroom. Together, their output will spill out into other rooms and give relief all over one of these compact little homes.

Total investment should be around \$300 or \$400. Well, says the home owner, that's something like it.

When building activities comparable to those in Los Angeles, Washington, Detroit, and Ft. Wayne begin to get going in other cities, we should see something stirring in the "packaged" air-conditioning business—that is, if the industry is alert to its opportunity.

LETTERS

Start at the Bottom & Grow Up With the Business

Reedley Ice Co.
Ice—Refrigerators
Fuel Oil—Stoves—Furnaces
15th and G Sts., Reedley, Calif.
Sept. 28, 1939

Editor:

There have been several men write into your department complaining of the lack of opportunity in the Air Conditioning Industry. The surprising thing to me was however, that these men were graduates of some training school or correspondence course.

I can not help but wonder what these men thought taking such courses would do to their immediate futures. A diploma does not buy a job or give a man an unearned raise in salary. A diploma signifies to the prospective employer that the man has learned to know and use the tools of his trade. But most im-

portant it signifies the willingness and ability to study and improve.

I think that there are many opportunities for trained men in the air conditioning industry, yes, and in refrigeration, heating, and ventilating in all of its branches. However, the man looking for these opportunities must be able to take the small jobs at the bottom first to develop experience as to the methods and policy of his employer. There are very few big jobs to be grabbed off. They can only be had by hard work.

I took a course from the Refrigeration & Air Conditioning Institute in Chicago. They got me no job although they offered to help me. Instead I went back to my regular employers and went about my work and when possible applied my training to the activities of our company. Since beginning the course I have had four promotions and I feel that the R-A-C-I deserve their share of the credit in providing the training. The rest was up to me.

I have also learned by experience that you can not stop studying if you want to keep going ahead. The "boss" asks for loyalty, initiative, and honesty and the rest will take care of itself if you will study and apply yourself to the job. I have also learned there are still opportunities for men who want to try and can see a future in a new or developing business and are willing to start from the bottom and grow up with it.

We have increased our business of selling ice by putting in air-conditioning installations when many said there was no opportunity for us in the field. If we can find an outlet for our training in developing something new, or by applying our knowledge to different industries, I know others can.

So, Mr. Editor, I wish you would tell these young men who have been feeling disappointed in training courses, or at the possibilities in the future of the air-conditioning industry, not to blame the industry or the courses they have taken. But, instead, to take a little time to analyze their abilities, personality, interests, adaptability, and training the same as an employer might do. Then pick the correct phase of the industry where they feel they can make the best showing. Study the job and then go to the prospective employer and sell themselves and not their training course.

The opportunities are to be had and what the men writing into you are experiencing are the adjustments of the industry to its growth. They must be ready to adjust to the changes and requirements of the employers.

NAT. N. LEAS, Mgr.

Note: See page 10 for further discussion of the opportunities for beginners, particularly graduates of home-study schools—Editor.

How To Keep Water Pure In a Humidifier

Liberty Bank of Buffalo
Buffalo, N. Y.

Editor:

We operate a Research Advisory Service for the benefit of our customers, and one of them submitted the following problem. I quote from the letter:

"What disinfectant is most suitable for preventing the growth of mold and other micro-organisms in the

humidifying water of an air conditioner in which the water is used over and over again?"

Will you be good enough to give me the benefit of your counsel to assist this worthy customer? However, if I have misdirected the problem, will you please advise me whom to contact for assistance?

BERT H. WHITE,
Vice President

Answer: Prevention of scale, mold, and micro-organisms in a humidifying system or an air washer is accomplished by the use of a solution designed specifically for the type of water encountered.

To secure effective results, it is necessary that an analysis of the water be made to determine the solution to be used and the amount. The following concerns are now in a position to supply these solutions, together with feeding apparatus necessary to gauge the correct amount of chemical used, in a given period of time.

North American Fibre Products Co., Cleveland, Ohio.

Metropolitan Refining Co., 20-25 50th Ave., Long Island City, N. Y.

Aquatic Chemical & Metallurgical Engineering Co., 118 E. 28th St., New York, N. Y.

Ferro-Nil Corp., 500 Fifth Ave., New York, N. Y.

What Readers Say

6709 Florida Ave. Tampa, Fla.

Sirs:

Please forward your complete catalog No. RL-3 to me at the above address.

Although I am only a student at present I find your News worth a million.

SAM F. GRAZIANO

315 Tremont St.
Fall River, Mass.

Sirs:

Inclosed find money order for \$1.00 for which please send me your book "Household Refrigeration Manual No. 4" by K. M. Newcum.

Your other refrigeration manual which I purchased from you (Manual Nos. 1, 2, 3, C-1, C-2, C-3) have helped me greatly in my service work.

JOHN F. HARRINGTON

City Park Chapel
209 Concord St., Brooklyn, N. Y.
Sept. 27, 1939

Sirs:

This is to acknowledge receipt of your sample Master Service Manual for which accept my wholehearted thanks. I think the information contained in these manuals is excellent for classroom purposes. I therefore intend to use your manuals as the standard text for my classes.

DAVID BENNETT
Refrigeration Instructor

Speerly Radio & Electric Service
Electrical Contractors
Mackinaw, Ill.

Sirs:

Many thanks for the 1939 specifications for household electric refrigerators. It's a big help on our sales.

Please mail c.o.d. the Beginner's Course on Household Service Manuals. I understand there are four manuals.

ANGELINA SPEERLY

Early Buying Indicates Space Heater Boom

DETROIT—Early fall buying of space heaters by dealers throughout Michigan is indicative of an uptrend this season, in the opinion of M. B. Robb, manager of the heating and air-conditioning division of Buhl Sons Co. here. Evanoli space heaters, manufactured by Evans Products Co. of Detroit, are handled by the Buhl organization.

Mr. Robb believes that space heater volume for this fall will exceed the number of units marketed in 1937, when the industry reached its all-time high.

"Last year was not a fair indication of space heater potential," Mr. Robb said, "because mild weather prevailed up until Christmas. This year people are buying again and a little cool weather will help the space heater business. Our orders from dealers are well ahead of last year, and our problems will be to make deliveries before the season is over."

Five men in the Buhl organization contact approximately 40 dealers for Evanoli heaters. Mr. Robb reports that the dealers have reported excellent results from the "forced-air" Evans units, which make it possible to deliver heat at the floor and keep several rooms comfortable.

The company also represents Pacific Gas Radiator Co. of Huntington Park, Calif., marketing this line of gas-fired residential forced-air heating systems. The "Templux" stoker, built by the Morse Chain Co. is also sold.

Carrier commercial refrigeration, room coolers, and self-contained store cooling units are handled by Mr. Robb's organization.

Mr. E. A. Mishler, who was formerly associated with the Ohio Edison Co. at Youngstown, is in charge of commercial refrigeration sales. This department has recently taken on the Taylor line of counter freezers.

Winners Announced In Advertising Contest

NEW YORK CITY—Tying up the public's fondness for crossword puzzles with the story of electric water heating won for M. G. Gorrow, Wisconsin Michigan Power Co., Appleton, Wis., the first prize of \$250 offered by Modern Kitchen Bureau for the best series of newspaper advertisements on electric water heating published between Jan. 1 and July 31.

Second prize, \$100, went to Fred E. Eriksen, advertising manager of Wisconsin Electric Power Co., Milwaukee. K. J. Haines, advertising manager of Illinois Northern Utilities Co., Dixon, Ill., won the third prize of \$50.

Mr. Gorrow's winning entry consisted of a series of 24 advertisements, which ran at the rate of three a week for eight weeks in the Iron Mountain News, Iron Mountain, Mich. Each of the advertisements presented a crossword puzzle, and offered prizes for the best solutions.

Each puzzle included a picture of the home of one of the company's electric water heater users, and the correct solution disclosed the name of this owner. Definitions in the puzzles pointed to advantages of heating water electrically.

Mr. Eriksen's advertisements stressed the inconveniences that can be done away with through electric water heating, and were spiced with entertaining drawings. They ran in the Milwaukee Journal.

Mr. Haines used photographs to illustrate advantages of an electric water heater, and featured a coupon good for \$4.44 as down payment on an installation. His series appeared in the Freeport, Ill. Journal-Standard.

'Mobil Chef' Is a Refrigerated Sidecar

ST. LOUIS—Summer is gone but the memory of the "Mobil Chef" lingers on here as a neat application of rolling refrigeration which brought in an average of \$20 daily in refrigerated drink and ice cream business during the hot weather, in addition to the sandwich snack trade.

The mobile chef was rigged up as a hobby, but the practical advantages of the units soon became apparent, and next year will doubtless bring a fleet of the money-makers on the streets. Manufactured by the Von Brecht Mobil Chef Co. of St. Louis, it is nothing more than a motorcycle side-car, enlarged to a 6-foot length and 2 1/2 foot width, with insulation throughout.

In the fore part of the unit, with trap door openings, bottled soda is kept with dry ice as the refrigerant. In a left rear compartment meats and rolls are kept. Orange drink, dispensed from the spigot, is also

refrigerated by dry ice. The top of the "chef" is of stainless steel, the sides are enameled in ivory, with superimposed blue lettering. A gasoline stove is operated from the rear of the unit, where supplies are also stored. Cost of the unit is estimated at \$1,000 by the owner, Charles Von Brecht.

If the "chef" line is expanded, it is considered likely that a mechanical refrigeration unit will be installed.

Plan this summer had the mobile chef cruising the streets—never entering the downtown section—to pick up business on call. A portable radio was often carried on top the unit to amuse customers while they ate and drank.

It is estimated that the chef covered more than 100 miles a day, running in two eight-hour shifts. Operation cost is said to be low, although no figures have been made public.

'Rolling Refrigeration'



Showgirls from the St. Louis Outdoor Opera grab a cold snack from a rolling "Mobil Chef," a small refrigerator on wheels which is now being manufactured by a St. Louis firm.

Scaife Goes To Hawaii For Hotpoint Line

CHICAGO—Howard L. Scaife has been appointed full-line Hotpoint representative in the Hawaiian Islands, for the Hawaiian Electric Co., Honolulu, Hawaiian Hotpoint distributor.

The announcement was made by R. W. Turnbull, vice president in charge of sales, Edison General Electric Appliance Co., Inc., Chicago, where Mr. Scaife has been employed for several years.

For the past two years Mr. Scaife has been assistant sales manager of the Hotpoint refrigeration division, headed by G. H. (Rock) Smith. Prior to joining the Hotpoint company, Mr. Scaife was with the appliance and merchandise division of General Electric Co.

Mr. Scaife sailed for Hawaii on Friday, Sept. 29, aboard the S. S. Lurline.

75-Cent Dividend Declared On Universal Cooler Stock

DETROIT—Directors of Universal Cooler Corp. have declared a dividend of 75 cents per share on the Class "A" convertible participating no-par stock of the company, payable Sept. 28 to stockholders of record on Sept. 23.

The company also has announced to its shareholders that outstanding Class "A" and Class "B" shares are now listed with the New York Curb Exchange, and that trading in this stock is expected to commence on Monday, Oct. 16.

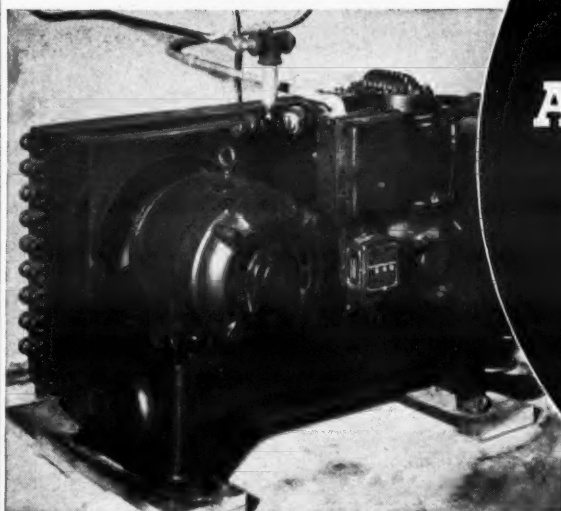
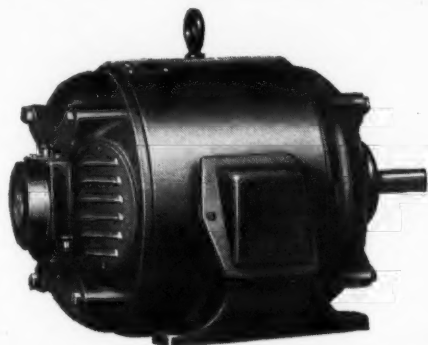
FTC Accuses Johns-Manville Of Misleading Advertising

WASHINGTON, D. C.—Johns-Manville Corp. and Johns-Manville Sales Corp., New York City, are charged with the dissemination of misleading advertising in the sales of an insulating material designated as "Rock Cork" in a complaint issued Sept. 29 by Federal Trade Commission.

According to the complaint, the respondents had been advertising to the effect that Rock Cork was an entirely mineral product, when in truth it contained approximately 88% mineral and 12% vegetable matter. The companies were granted 20 days for filing answer to the alleged violation of the FTC act.

Bernhard's Move

RALEIGH, N. C.—Bernhard's, complete line Hotpoint dealer here, has moved across the street from his old location on Hillsboro St.



Century RS Single Phase Motor driving refrigeration compressor

Century Motor Specialization + Correctly Engineered Application = Specified Motor Performance

Century
Type RS MOTORS
Assure Least Voltage Drop at Starting
—a real advantage for you and your customers...

THE high starting torque and low starting current of Repulsion Start Induction Single Phase Motors assure least voltage drop on long or heavily loaded lines, better voltage during starting at the motor terminals and least light flicker.

In addition, Century Type RS Motors provide smooth, quiet operation at all times, long life and an attractive exterior appearance that matches all requirements of modern equipment design.

Century Repulsion Start Induction Single Phase Motors have behind them 36 years of proven ability to handle modern refrigeration compressors and other hard to start loads, requiring specified motor performance. There is a Century Type RS Motor engineered to meet every air-conditioning requirement economically.

Call in the Century Motor Specialist located nearest your office. His years of specialized experience in correct motor application are always at your service.

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'The Well-Prepared Man Is What the World Needs' Says Cuban Jobber

Alvarez Offers His Experience To Encourage Home-Study Men

Servicio General de Refrigeracion
Expertos en Refrigeracion
Electrica Automatica
Zanja 513, Habana, Cuba
Sept. 22, 1939

We have been following with a great deal of interest the publication of letters written by Ralph Link, O. A. Fusch, and D. L. Nelson, also the last letter from H. T. Myshak (page 11 of Sept. 6 issue) and Mr. Cockrell's comments, wherein views and opinions are expressed concerning the Correspondence Training Schools and the difficulties encountered by graduates in finding adequate positions in the refrigeration industry.

The writer, as a reader of the News, takes the liberty of submitting herein some of his viewpoints on the subject:

I certainly believe that one of the labor activities requiring more technical school preparation is that of refrigeration mechanic, for it must cover, among other subjects, the elementary knowledge of mathematics, physics, chemistry, electricity, mechanics, etc., after which the individual must acquire field work practice for not less than two years before he becomes an average service man.

A refrigerating equipment, whether it be a household refrigerator of 1/2 hp. or an air-conditioning unit of 200 hp. is nothing more than an automatic or semi-automatic refrigeration plant.

Experience Required To Make Accurate Diagnosis Quickly

Quite often the service man called to correct any deficiency in a system has never seen it before. It is naturally assumed that the client is

not an expert in refrigeration and could only tell the service man about the effects. However, the cause of failure is to be discovered by the service man in the least possible length of time and his diagnosis must be accurate. This requires real experience. (A diagnosis includes the probability of a defect not being in the equipment.)

It is possible that this is one of the reasons why employers are supposed to be somewhat reluctant to engage graduates in this sector of the refrigeration industry. In other words, "graduates" in any life activity mean very little to the employer unless the individuals are backed up by a proven practical experience. Yet, there is a cumulative force in the school training and it is fundamental to develop the type of employee sought in this line of business.

Moreover, a graduate has, in addition to the value of theoretical knowledge, lots of other merits from the standpoint of a person who has been able to accomplish a continued effort through which he has acquired the habit of study and discipline, to say nothing of the sacrifice usually entailed in the financial support of the school training course.

But as above stated, such merits do not count much with those having the duty and responsibility of selecting personnel for the industry or institution they belong to. For me, this has been a rather arduous task for over twenty years, first working as a head employee, and at present in my own business. Experience will show anyone dealing with the choice of working people, that besides the so-called technical, scholastic preparation, an employee must possess other not less important qualifications.

Schooling Is Only One of The Desired Qualifications

Hence the tendency of the employer to prefer an applicant with a proven practical experience, for this qualification is not to be detected, but simply verified by means of references, and it is commonly supposed that the experienced mechanic also has a technical knowledge acquired in some training school or otherwise. Therefore, such a choice simultaneously eliminates the investigation of two factors, thus remaining for consideration as complementary records are the moral standing, behavior, and personality.

There is also the diplomatic faculty of the applicant to bring back the goodwill of a customer whose mental attitude is so peculiar when feeling that he is not obtaining "the nice operating performance of the equipment" promised by the salesman when closing the deal.

But even so, there will always exist the recognized principle that well-prepared men is what the world needs in this and any other field; particularly at present when methods and structure transformation are running parallel with the vertiginous progress in mechanical and electrical devices automatically operated. He does not waste his time and money who studies and prepares himself to a better advantage when the opportunity arises to get ahead, thus becoming a "survival of the fittest."

I, personally, regret that I did not realize the advantage of the well-prepared until I was 21 or 22 years old. Having lost my father at the age of 9, circumstances forced me to work for a living since then. At that time (1902) almost no social laws existed in Cuba—and only on the strength of mother's advice we attended evening school. When I was 18 years old I first began to attend a night Mechanical Training School more with a desire for knowledge than for ambition.

At 21, I switched to a position as draftsman in the Locomotive Department of the United Railways of

Havana and soon realized that my knowledge and preparation were very limited. That prompted me to enroll in the International Correspondence School of Scranton, Pa.

It is obvious that my preparation has been deficient and, notwithstanding, the knowledge I acquired through the training school was useful enough for me to make my headway in this line of business. It was in 1928 that I started to work for Walter & Cendoya, former distributor of Frigidaire in Cuba, where shortly afterwards I was appointed service manager. The depression in 1933 forced this firm to quit the business and I then decided to work for myself by establishing an independent service shop.

Often times at the beginning I got home late at night with the bitter feeling of quitting the enterprise, for I was hardly making a living out of it, but next morning the idea of perseverance and new optimism kept me going on and sticking to it. The results are that today our service department is only a part of our business and that we are the only organized jobbers in this country. We now have a pretty complete stock of refrigeration material such as coils, valves, fittings, tubing, refrigerants, oils, tools, and replacement parts for condensing units. Our sales cover the entire territory of Cuba. No doubt, if I had a better preparation our business would be far more diverse and prosperous.

School Training Is Like the Foundation of a Building

The school training is something like the foundation of a building. First you spend money and effort to construct a foundation. Then comes the erection of the floors, perhaps requiring a greater effort, but which

once accomplished represents the income. The number of floors that can be built up depends upon the solidness of foundation, so closely is it related to the extent of the exploitation.

School is the source of supply for knowledge. The rest is up to ourselves and whatever knowledge we may possess, it has to be applied in the right direction and the opportune time. An auto-analysis of ourselves often shows that the true reason for our success or failure lies in our own character and disposition. If we are able to discover our weak points responsible for a handicap, the solution is easy.

All of us soon learn in life that to go forward and meet success after the scholar preparation, we must work more than eight hours per day. We must use a good part of our spare time to the study of textbooks, manuals, bulletins, and to the reading of trade newspapers, in order to broaden our knowledge and information as to the up-to-date progress of the industry. This invariably becomes an asset to ourselves, not to the organization we may work for.

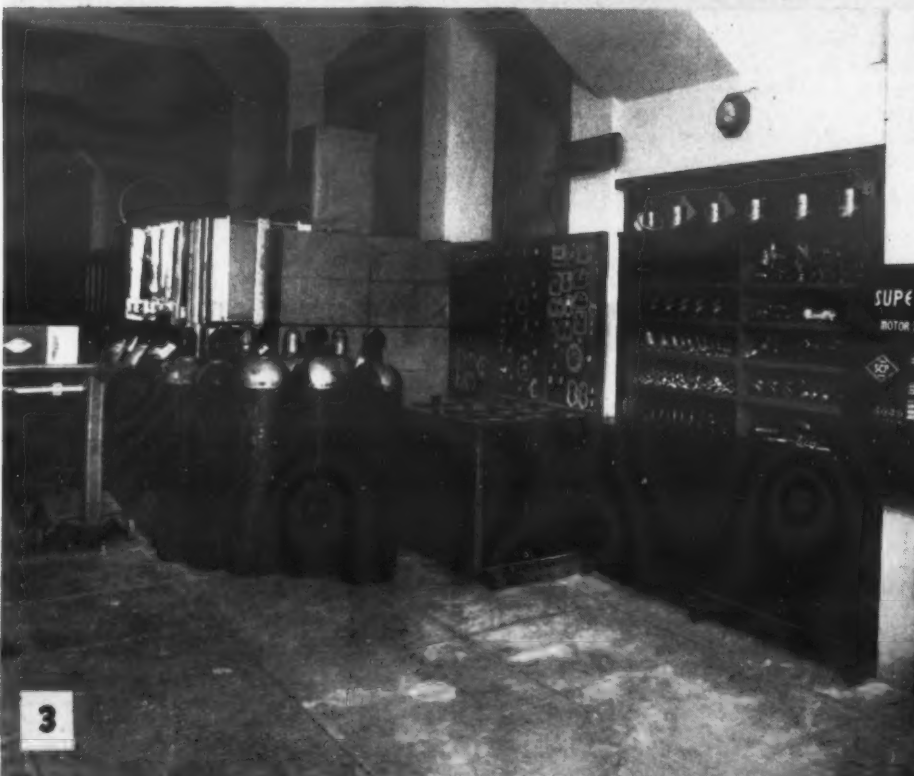
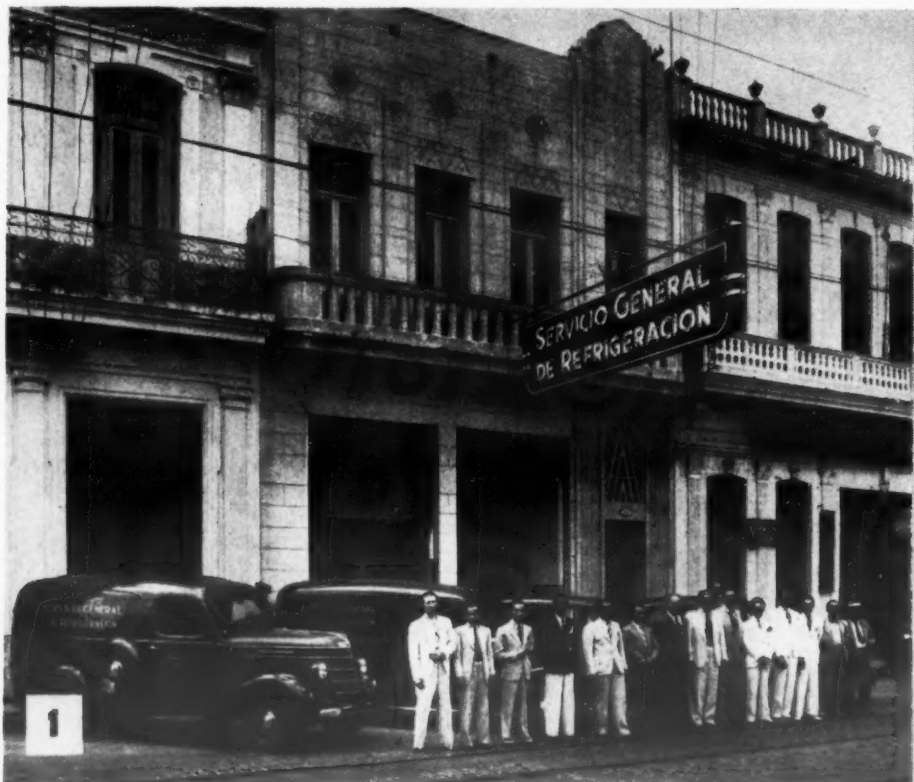
Of two men working intensively, the one possessing more knowledge has the better chance for a higher income. In fact, we can never forget that in order to obtain something worthwhile one must necessarily carry out a tremendous effort.

The foregoing thoughts might perhaps assist Mr. Link, Mr. Fusch, and others to overcome the adverse conditions they are facing in the ample proportion of their evident ability to attain success. An inside exploration of their faculties, along with the editor's advice, may also help them to discover and develop a hidden inborn power to surmount any obstacle.

Thanks editor.

A. ALVAREZ,
Manager

Views of Personnel, Stock and Equipment of Servicio General de Refrigeracion, Havana, Cuba, Whose Manager Wrote the Above Letter



Air Conditioning

Full Capacity Jobs For Key Customers Builds Business of Conditioning Firm

By Robert M. Price

WILKES-BARRE, Pa.—When you bid on an air-conditioning job never sacrifice full capacity to put in a cheap estimate. That is a hard and fast rule of the air-conditioning department of Popky Freezer Co., York distributor in this territory, and by giving every customer all the cooling he needs, repeat business and new accounts for this company are way up, as good installations have a way of selling others.

That has been the policy from the first job installed, according to Harry Popky, firm member. The company set out to set up what Mr. Popky called "key customers." These customers were influential business men in the district whose recommendation the Popky company knew meant a great deal toward producing further business. In these installations, as in all others since that time, extreme care was taken with every step of the job.

First the firm's engineer was sent to make a careful check of every angle of the installation. He then drew up his proposal of what equipment was needed to give absolute cooling satisfaction, regardless of cost or of competitor's bids. Every proposal was double checked with factory men.

Sure of their ground, the next step was selling the job to the prospect. The selling was done on the promise that the installation was to give satisfaction in every respect. Naturally some jobs were lost to a competitor who agreed to cool the job with less equipment. In no case did the company put in an installation simply to get the business.

KEY ACCOUNTS IMPORTANT

The hardest accounts to land were the key accounts, but the company has been well repaid for their stand with jobs which resulted from these key accounts. The company then kept in constant contact with these accounts, selling one job after the other on unconditional okays of customers.

As proof of the plan, Mr. Popky pointed to results. On the Public Square in Wilkes-Barre, the main business district, they have installed eight out of 11 air-conditioning systems. As an example of how one job sells another, an instance was described of a dress shop in this section which installed a self-contained unit. In bidding on the job care was taken to give adequate capacity for the store, and with additional capacity to allow for enlarging the store. When the store was enlarged, the same air-conditioning unit took care of the additional space nicely. Needless to say, the store manager

was more than pleased and didn't hesitate to say so—and, to other prospects.

Another example was the installation in a branch of the Triangle shoe stores. So pleased was the head of this company, a large concern operating some seventy stores in many parts of the country, that five more installations followed the first. More stores will be added each year, it is expected. So sold is this man on the air-conditioning installations already installed that he will not consider any other firm, Mr. Popky declares.

Another job was an installation in a doctor's office. He had tried three different conditioners and each time the job failed to meet his requirements. On a tip he turned to the Popky firm.

"For the love of heaven," the disgusted doctor said, "give me some air conditioning in my office. I don't care what it costs, but it must work." Cost was forgotten to the extent of giving the office the equipment it needed. The doctor is now a member of the firm's booster club.

ROOF SPRAY USED

It is not always a case of recommending more equipment to make the job right, Mr. Popky says. A bowling alley operator had a rather difficult problem in cooling. His building had a large, flat roof that created a large heat load. Competitors bid many tons over the 10 tons bid by the Popky firm. The problem was solved by taking the waste water from the system and spraying it on both sides of the roof. The bowling alley operator was so delighted that he paid spot cash for the job. He has been smiling ever since over the saving.

Sometimes men who are not even customers of the Popky firm are instrumental in selling air-conditioning jobs. A lawyer, who knew of the work the firm had been doing, had a client who operated a tavern. Learning that he was going to put in air conditioning, he told the man:

"See Popky about this job. I'll personally guarantee anything he does."

The job was sold, and strangely enough, this lawyer does not handle legal matters for the Popky firm. "The news of good jobs travels fast," Mr. Popky explained.

Working on this theory of never underselling a job, the Popky company was third highest this year out of all York distributors in its sales campaign. The Popky boys, Charlie, Lou, and Harry, also operate a profitable commercial refrigeration business.

Small System Aids Theater Ventilation

LANSDALE, Pa.—Use of a minimum amount of refrigeration to improve comfort conditions in a theater was demonstrated by the installation of a 5-ton Brunner compressor and two evaporators in the Lansdale Theater here. The system was designed by the C. F. Moores Co., Inc. of Philadelphia.

The existing ventilating system used in the theater handled 50,000 c.f.m. drawn from a roof intake approximately 40 feet above the street level. This air reached the auditorium through two large ornate grilles mounted above the picture screen.

This was found to be effective in all parts of the theater except the area in front of the projection

room, which represented a natural barrier for air currents. The cooling systems were designed so that the small cooling plant fans deliver 4,000 c.f.m. of air in counterflow to the air delivered by the large ventilating fans. Velocity was established at 700 c.f.m. and delivery is through two grilles placed to cover the dead areas.

This counter-flow feature is said to create a high diffusion about 30 feet in front of the grilles, which spreads the air over a wider area.

Because the water rate is very high, a special evaporative condenser was designed and built by the C. F. Moores Co., which uses 30 g.p.m., a saving of 470 g.p.m. over a water cooled condenser.

Hinged Ductwork Used In Bank Vault System

OMAHA, Neb.—The United States National Bank has recently installed a 5-ton air-conditioning system for cooling its safety deposit vault and individual booths as well as its securities vault on the second level of the sub-basement.

Through a novel arrangement, conditioned air is supplied to the interior of the securities vault by a hinged duct which is swung out of position when the vault is sealed at night.

Two air-conditioning units provide cooling, dehumidifying, filtering, air circulation, and ventilation. Also, by an ingenious arrangement, each unit is connected to the present building air supply, and is able to furnish winter conditioning as well through the same distribution system. The installation was made by the local branch of Natkin & Co., air-conditioning contractor.

New Control Regulates Static Pressure on Fan Systems

MINNEAPOLIS — Minneapolis-Honeywell has put on the market the type P-212A electric static pressure regulator, designed for use in conjunction with a motorized damper, to control the static pressure in a discharge duct of a fan system, the overfire draft in a combustion chamber, or similar applications where definite static pressure conditions are to be maintained.

LETTERS

Membership Blanks Ready

Mechanical Cooling Corp.
Authorized York Distributor
Jacksonville, Fla.

Sir:

We are very much interested in the formation of a local air-conditioning association and would appreciate any help, suggestions, or advice that you might give us along these lines.

It occurred to the writer that you no doubt have pamphlets or printed suggestions covering this subject as well as information on how a local association should be organized.

We are also very much interested in the National Air Conditioning Association, and if we are successful in organizing a local association, would certainly want to become affiliated with the national association.

We would greatly appreciate hearing from you at your earliest convenience in order that we might start formation of a local association.

L. J. McRAE,
Secretary-Engineer

Answer: "Applications for Charter Membership" in the National Air Conditioning Association may be obtained from John H. Keller, Mechanical Heat & Cold, Inc., 7704 Woodward Ave., Detroit, Mich. Mr. Keller is chairman of the Temporary National Council.

First annual convention of the new association has been scheduled for the Stevens hotel, Chicago, Jan. 16, 1940, during the Second All-Industry Refrigeration and Air Conditioning Exhibition.

Who Makes Wet Filters For Humidifiers?

Miller Automatic Services
Air Conditioning, Oil Heating and Electric Refrigeration, Gas Ranges, Water Softeners, and Bottle Gas for Rural Homes
Fond Du Lac, Wis.
July 3, 1939

Editor:

Some time ago we wrote you for the names of manufacturers of filters, but we did not find a manufacturer of the type of filter which we want. We now think that perhaps what we want to buy is not called a filter, but is called a part of a humidifier or air washer.

The thing which we want to buy is made of long shavings of copper or other non-corrosive metal, made up into a pack similar to an air filter. Above this pack is a trough with a lot of holes in it. Water is pumped into the trough and allowed to run down across the metal shavings. The air is blown into the pack, where it is cleansed to a certain extent and humidified.

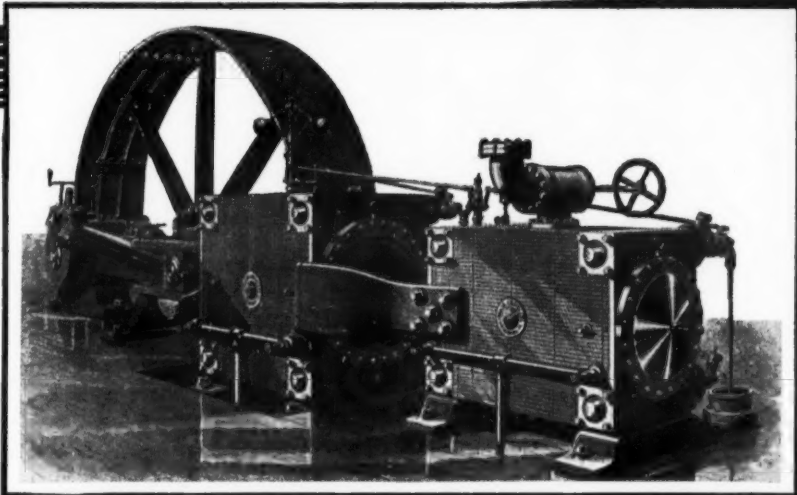
We hope that with this description you will be able to give us the names of some manufacturers of units of this kind.

RALPH E. MILLER

Answer: We do not know of any company which manufactures an item of this type as a stock item, although the principle is involved in many desert-coolers and in some humidifiers.

If you would write to H. J. Somers, Inc., 6063 Wabash Ave., Detroit, I believe that this organization could supply you with the type of unit which you want. Mr. Somers builds air filtering equipment with special Bohemian glass wool, but could, no doubt, supply you with copper units, if you so desired. Either glass or copper would be entirely satisfactory for the purpose you had in mind.

One of the World's Oldest Makers of Thermo Valves



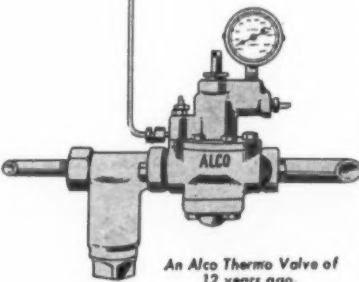
Still Leads the Field of REFRIGERANT CONTROL

More than 12 years ago, when Alco Valve Company patented one of the first thermostatic expansion valves for refrigerant control, the accuracy and dependability of this type of valve led the field. Today, through years of research, experimentation and improvement, Alco, the pioneer, still leads.

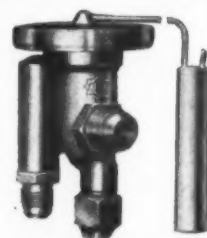
Alco was the first to conduct complete tests on standard low sides to determine the best and most efficient control applications to various types of evaporators. Alco pioneered in being the first to use the simple cage type construction; first to use atomic hydrogen welding of the power assembly; first to introduce the Multi-Outlet Thermo Valve. As compressors developed from types similar to that shown above, Alco has steadily improved the design and per-

formance of Alco Thermo Valves to meet new applications and new performance standards. Contrast the early Alco Valve at the left—large, complicated, with many parts—with the light, yet sturdy streamlined efficiency of an Alco Thermo Valve of today shown below.

Proof of Alco's leadership is to be found in the performance record of thousands of Alco Thermo Valves in operation on every type of air conditioning and refrigeration installation throughout the world. Just as in the earliest days of the industry, Alco today offers the most accurate, dependable refrigerant controls designed for long life and completely satisfactory service.



An Alco Thermo Valve of 12 years ago.



ALCO VALVE COMPANY
2620 Big Bend Blvd.
St. Louis, Mo.

ENGINEERED REFRIGERANT CONTROLS

FOR HIGHEST EVAPORATOR EFFICIENCY

SERVEL Silver Fleet



Smooth and silent as a sailboat, Servel's "Silver Fleet" refrigerating machines offer you a standard of operating efficiency that is 3 to 5 years ahead of the field. Ask for the new 72-page catalog. Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Ind.

COMMERCIAL REFRIGERATING MACHINES

Service Methods

Servicing the Grunow Refrigerator Unit

Procedure For Removing Compressor & Other Parts; Diagnosing & Remediating Typical User Complaints

Editor's Note: This information on servicing Grunow refrigerator units is taken from both the official factory service instructions, and also from information furnished by men in the field who have specialized in work on Grunow units. Other instalments of this series have been published in the two preceding issues.

The information is presented along two lines, one part describing some of the methods of checking and servicing the unit, and the other part devoted to a diagnosis of complaints, with suggested remedies.

Removing the Unit

In general the replacement of any of the major parts of the unit should be made by first removing the unit from the cabinet with the exception of the top mounted units. This may be done in the following manner on bottom mounted units.

1. Pull line cord out of wall receptacle and remove air duct from rear of cabinet.
2. Disconnect liquid line from the float or Carrene meter by unscrewing the flare nut connection of the two. This operation must be done before the following one.
3. As soon as no more air is heard

to enter the system through the liquid line, immediately disconnect the suction line from the compressor.

Note: These operations leave the entire charge of Carrene in the evaporator except that amount which normally remains in the compressor oil, float or Carrene meter, and the radiator-condenser.

4. Remove the two carriage bolts at the rear corners of the unit mounting board. Now the unit may be removed from cabinet through opening at rear, and set on the floor directly behind cabinet. If it is desired to move unit entirely away from cabinet the cover of the electrical unit must be removed and the three control cord leads disconnected from the relay. These leads are held on the relay by screws.

In order to replace the unit, the above procedure should be followed in the reverse order. Care should be taken to connect the electric control leads to their proper terminals. This should cause no difficulty if the color code shown on the wiring diagram is followed. Care should be taken when replacing the flare connections and the unit should be tested for leaks.

It should never be necessary to remove a top mounted unit in order to replace any part. In case the

whole unit has to be removed pull the line cord out of wall receptacle and pull through hole in back of unit compartment. Remove ice trays from evaporator. Two men should lift unit out, using same procedure as when making the installation except in reverse order. Place unit in original shipping box or in a frame built for such a purpose. Do not lay unit on evaporator. Never put a top mounted unit in such a position that the compressor oil will flow over into the condenser-radiator.

Removing the Compressor

Removing the compressor: First remove the unit from the refrigerator if it is a bottom mounted unit.

If it is a top mounted unit, it is not necessary to remove complete unit; just disconnect, first, the Carrene Meter from the liquid line at the flare nut connection, and second, disconnect the compressor suction tube from the cabinet suction tube at the flare nut connection. The compressor suction tube is not removed from the compressor until after the compressor has been removed from the cabinet.

Now proceed with the following:

1. Remove bakelite insulators from compressor dome by twisting with hand. Unsolder the three motor leads from the compressor.
2. Unscrew the flare nut which connects the condenser-radiator to the exhaust fitting of the compressor.
3. Remove the six nuts or self tapping screws which hold the compressor feet to the mounting board. (The top mounted units are assembled on the mounting panel with self tapping screws.)
4. The compressor is now free to be removed from the mounting board.
5. In the case of the top mounted unit compressor, the compressor suction tube may now be removed.

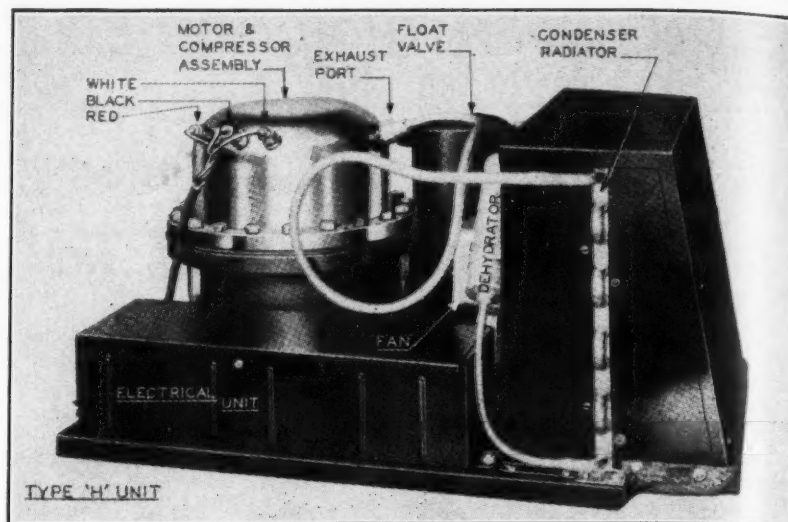
To replace the compressor the above procedure should be followed in the reverse order. Care should be taken in connecting the motor leads to the proper terminals on the compressor. Follow the color code given on wiring diagram.

Removing the Carrene Meter

If a diagnosis shows that the Carrene meter is restricted and cannot be opened with air pressure, or if the liquid line repeatedly freezes up with water, the Carrene meter should be replaced. This can be done by the following method:

1. Pull line cord out of wall receptacle.
2. Disconnect the Carrene meter from the liquid line at the flare nut connection.
3. After no more air is heard to enter the system, loosen the suction line flare nut at the compressor.
4. Disconnect the Carrene meter from the outlet tube of the condenser-radiator at the flare nut connection on the end of the Carrene meter.
5. Remove hold down strap and Carrene meter is free.

Type 'H' Grunow Household Refrigerator Unit



Type "H" unit employed on larger model refrigerators. It used the No. 830 compressor. Note use of dehydrator.

When replacing the Carrene meter the above method should be followed in reverse order. Add half a cup of Carrene to compensate for that left in Carrene meter. Use care in making all flare connections. Test for leaks and then purge the unit in the regular way.

Thermostat Settings

Altitude affects the setting of the thermostat control. The thermostat controls are all set in the factory at position No. 2 to give a cabinet temperature of between 41 and 44° when the room temperature is 80°. The greater the altitude, the lower the refrigerator temperature. A change of 1 inch in barometer reading will shift the thermostat bulb temperature about 1½° at the on and off positions.

To correct the thermostat for barometer variations the metal cap on the end of the temperature control knob should be removed and the screw underneath it loosened. This permits the shifting of the knob on the shaft.

Shifting the knob clockwise on the shaft raises the box temperature and shifting it counter-clockwise lowers the box temperature. After the knob has been set in its new position, the screw should be tightened and the small escutcheon replaced. It may be necessary at some time to reset the thermostat control for other reasons.

For example, if the food compartment temperature remained below 40° F. with the thermostat set on position No. 1, the thermostat should be reset to maintain a warmer food compartment temperature.

To do this, set thermostat pointer on position No. 1 and remove the metal cap. Loosen screw, being careful that pointer doesn't move accidentally. Now swing pointer around to position 3 and tighten screw. The pointer may now be turned back to position No. 1 which will give a warmer operating condition.

If it is desired to make a refrigerator operate colder, the above procedure should be reversed.

Method of Quieting Noisy 'D' Compressor

Editor's Note: Following information was furnished by Jack Shinberg, former Grunow national service manager, who now operates the Grunow Factory Authorized Service Co. at Berkeley, Calif. Service men who have special questions about the Grunow can write to the News concerning them, and Mr. Shinberg will answer as many of the questions as possible.

Service men will often run into complaints that model "D" Grunow compressors become very noisy and hum very loudly.

On this model the factory installed four rubber mounting pads under the metal covers, as these compressors were 1934 models and have been in use for about five years these rubber pads have become very hard and have lost their sound-deadening effect. In many instances the bolts that pass through these rubber pads are resting on the wood mounting board.

If the service man will replace these pads with new ones molded in light Para rubber, this complaint will be remedied.

In replacing these pads best procedure is to take the compressor off the mounting board assembly, turn it over on its side, pull the cotter pins, take off the nut and pull the rubber pad off instead of trying to unscrew the leg from the compressor. This procedure should be followed also when installing a new compressor.

Be sure to install the new cotter pin and don't tighten the nut that holds the rubber foot to the metal cover, only just enough to get the cotter pin reinstalled.

Midwest Jobbers Meeting

DES MOINES, Iowa—A meeting of the Midwest Refrigeration Supply Jobbers was held here on Oct. 2 at the Fort Des Moines hotel. The meeting opened with a luncheon at the hotel.

Table For Thermostats Used on 1935 Production

Thermostat No.	Temperature on No. 2 Position "On"	Temperature on No. 2 Position "Off"	Temperature on Rapid Freeze Position "Off"	Temperature on Defrost Position "On"	Used on Models
9263	28° F.	17° F.	0° F.	40° F.	50-S
9263	28° F.	17° F.	0° F.	40° F.	60-S
9263	28° F.	17° F.	0° F.	40° F.	56-SD
9263	28° F.	17° F.	0° F.	40° F.	61-D
9263	28° F.	17° F.	0° F.	40° F.	51-D
10145	30° F.	20° F.	0° F.	40° F.	82-HSD
10145	30° F.	20° F.	0° F.	40° F.	82-DSD
10338	30° F.	20° F.	0° F.	40° F.	67-D
10338	30° F.	20° F.	0° F.	40° F.	67-SD
10338	30° F.	20° F.	0° F.	40° F.	82-D
10338	30° F.	20° F.	0° F.	40° F.	82-SD



"YES SIR . . . IT'S A SUPERIOR ECONOMIZER!"

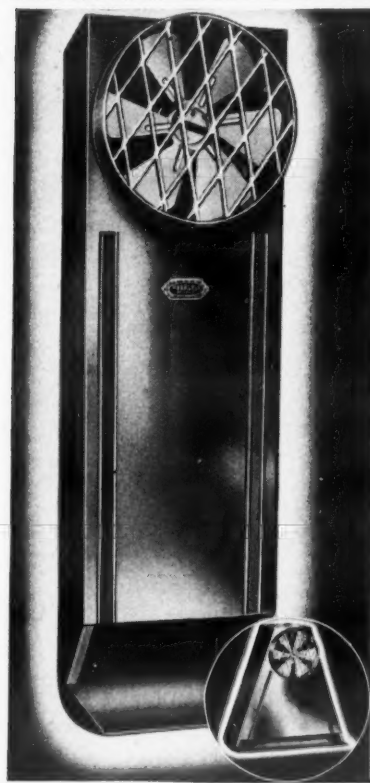
It will increase the overall capacity, and reduce the running time of your commercial job AS MUCH AS 20%.

ECONOMIZERS prevent sweating and frosting of suction lines—save compressor repairs caused by oil slugging—provide for active use of 100% of evaporator surface—and bring "on-the-line" jobs within the normal cycle range.

A profit-sharing investment for the merchant—a money-maker for refrigeration men!

Write for Bulletin R7—it contains valuable information on Heat Exchangers.

Sold by leading jobbers everywhere
SUPERIOR VALVE & FITTINGS COMPANY
500 THIRTY-SEVENTH STREET • PITTSBURGH, PENNA.
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PEERLESS Gun Cooler (UPSIDE DOWN COOLING)

COLD AIR cascades from the BOTTOM of the PEERLESS GUN COOLER

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Uniform temperatures ALL OVER the Fixture

HIGH HUMIDITY—NO FOOD Shrinkage And its PACKAGED Refrigeration . . .

made for every type of fixture . . . ready and easy to install . . . Capacities 1200 to 12000 B.T.U. per hour.

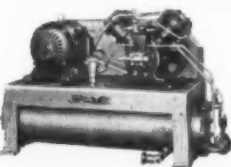
TRY THIS NEW METHOD ON YOUR NEXT JOB!

PEERLESS OF AMERICA, INC.

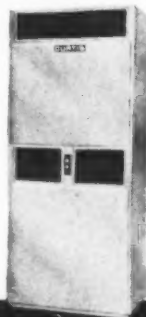
General Offices—515 W. 35th St., Chicago, Illinois
Midwest Factory—515 W. 35th St., Chicago, Illinois
New York Factory—43-20 34th St., Long Island City
Pacific Coast Factory—3000 S. Main, Los Angeles
Southwest Factory—2218 N. Harwood St., Dallas
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CURTIS Water Jacketed Cylinders Increase Efficiency of Larger Capacity Units

The Curtis Line includes condensing units from 1/6 to 30 H. P., both air and water cooled, but all Curtis compressors above 5 H. P. are water cooled for increased efficiency and lowered operating costs. The prime purpose of the unit is to effect the transfer of heat, and water cooled compressors makes possible a more rapid transfer. Cooler cylinders assure better lubrication; cooler gas allows more gas to be compressed with each piston stroke. Particularly in large capacity installations, water cooling carries away heat rapidly and economically.



15 H. P. Shell and Tube Type Condensing Unit. The Curtis Store and Office Cooler—3 and 5-ton sizes.



This is only one of many engineering refinements offered by Curtis which contribute much to the high efficiency and dependable, trouble-free performance of Curtis condensing units.

It will pay you to find out more about Curtis. Write today.

CURTIS REFRIGERATING MACHINE COMPANY

Division of Curtis Manufacturing Company

1912 Kienlen Ave. St. Louis, Mo.



Builders of Condensing Units since 1922

Diagnosing Imperfect Operating Conditions On the Grunow Unit

(Continued from Sept. 27 Issue)

Complaint 4. Refrigerator Freezes Ice, But Food Compartment Not Cold

A. Thermostat Left in Defrost Position. Check setting of the thermostat pointer and set it to normal running position.

B. Thermostat Set On Too Warm a Position For Operating Condition. Check food compartment temperature by placing an accurate thermometer in some liquid which has been in the refrigerator for some time. If the temperature is above 50° F. turn the thermostat pointer to a colder operating position.

C. Evaporator Covered With Frost. See if evaporator is heavily covered with frost or ice. At no time should the frost be greater than 1/4 inch thick. Instruct the owner to defrost more often.

Complaint 5. Refrigerator Won't Freeze Ice, But Food Compartment Is Cold

A. Location of Refrigerator Too Cold. Refer to Complaint 2-C.

B. Refrigerator Operating on Defrost Cycle. Refer to Complaints 4-A and 4-B.

Complaint 6. Evaporator Defrosts

A. No Power Supply to Refrigerator. Refer to Complaint 2-A, B, E, and G.

B. Overload Button Popped Out. If overload trip button is out, push it in. If button is already in, pull it out and push it in to be sure that it is making contact. Refer to Complaint 1.

C. Thermostat Left in Defrost Position. If the thermostat pointer is in defrost position turn it back to normal operating position.

D. Adjustment of Thermostat Set Too Warm. Remove all ice trays and lay an accurate thermometer on bottom of evaporator. Allow refrigerator to cycle a few times with thermostat set on position No. 1. At moment the refrigerator starts, open refrigerator door and read thermometer quickly. If above 30° the thermostat needs adjusting to a colder setting.

E. Shortage of Carrene. Check charge and add Carrene if found short.

F. Overcharge of Carrene. Refer to Complaint 3-M.

G. Condenser-Radiator Covered With Dirt. Refer to Complaint 1-A.

H. Faulty Air Circulation. Refer to Complaint 1-B.

I. Air In the System. Refer to Complaint 1-C.

J. Liquid Line or Carrene Meter Restricted or Float Valve Stuck Shut. Allow evaporator to warm up completely and defrost. Then start refrigerator. If the evaporator immediately starts to get cold and frosts up in a few minutes, it indicates that the liquid line was frozen up with water. If the evaporator does not immediately get cold, the liquid line or Carrene meter is either restricted with some foreign material or the float is stuck shut.

To check for restricted Carrene meter try to force air through it.

To check for stuck shut float disconnect liquid line at float connection. Bend down liquid line coming from float. If Carrene runs out this indicates that the liquid line going on up to the evaporator must be restricted with some foreign mate-

rial. Refer to Complaint 3-I. If no Carrene runs out, pour about 100 c.c. (about one cup) of Carrene into float through purge opening. If no Carrene runs out of liquid line now, this indicates that the float is stuck shut. Hit float with hand to try to dislodge float needle.

If liquid line is found to be frozen up, change float or Carrene meter and put new dehydrator on units having floats.

If float is found to be stuck shut and continues to stick, replace float.

Complaint 7. Food Compartment Too Cold

A. Location of Refrigerator Too Cold. If room temperature is below 32° the food compartment will be nearly the same temperature, which is too cold. Relocate refrigerator to a warmer room.

B. Thermostat Left in Too Cold A Position or In "Rapid Freeze." Check setting of thermostat and turn pointer back to normal operating position.

C. Thermostat Internal Setting Too Cold. Refer to Complaint 3-B.

D. Short In Wiring Leading To Thermostat. If the refrigerator runs all the time pull out the overload trip button. If the unit continues to run, this indicates that either the thermostat is faulty or that there is a short in the electrical system. Remove the control wires from under cover at back of thermostat. If unit stops, then the thermostat is faulty. If the unit continues to run, then there is a short in the electrical system.

Disconnect the red lead of the control cord at the relay. If the unit stops, then there is a short in the control line leading from the relay to the thermostat. If the unit still continues to run, then there must be a short or a wrong connection in the electrical unit itself. Check electrical circuit with diagram.

E. Faulty Thermostat. Eliminate the possibility of Complaint 7-C. Then remove all ice trays and lay accurate thermometer in bottom of evaporator; shut refrigerator door and allow the refrigerator to run for 15 minutes with thermostat set on position No. 1. Open door and read thermometer quickly. If below 15°, the thermostat is faulty and should be replaced.

Complaint 8. Interior of Refrigerator Sweats

A. Food Compartment Too Cold. Refer to Complaint 3-B.

C. Evaporator Heavily Covered With Frost and Ice. Frost should never become greater than 1/4 inch thick. Advise owner to defrost more often.



"HAVE CLARAGE MAKE THEM!"

Every year we ship to builders of air conditioning units thousands upon thousands of Clarage Blower Wheels and Assemblies.

This smaller equipment is designed with the same skill characteristic of the larger Clarage apparatus—just as carefully fabricated and tested.

And we have sizes to meet ALL REQUIREMENTS—with slow speed operation insuring SILENT PERFORMANCE.

May we have your next inquiry?

CLARAGE FAN COMPANY
KALAMAZOO, MICHIGAN
Sole Offices in All Principal Cities

'Electric Bartender' Works Without Pre-Cooler

WILKES BARRE, Pa.—Popky Freezer Co., commercial refrigeration firm here, has announced that it has completed plans for the manufacture of a self-contained beer cooler to be known as "the electric bartender."

The unit, designed by Louis L. Popky, is said to operate without the use of a pre-cooler, drawing draught beer from the supply through a dispenser located in the bar. No tanks or coils are employed in the process, according to Mr. Popky. The company plans to announce further particulars on the new unit when it is ready for distribution.

Cold Storage Meat Law Changed In Wisconsin

MADISON, Wis.—Gov. Julius P. Heil has signed bill No. 548, S, which amends the cold storage statute to permit cold storage meats to be sold in the future as "frozen" or "frosted" products instead of "cold storage." The legislature also approved a bill extending the period permitted for cold storage from 13 to 18 months.

New Service Firm Started In Los Angeles

LOS ANGELES—Allen G. McDonald has organized the Owl Refrigeration Service here.

MERCHANT & EVANS Seals Crankshafts

"for Life"



SYLPHON BELLOWS

Merchant & Evans uses Sylphon Bellows for crankshaft seals in all compressors, from 1/4 hp. up to 20 hp., for a number of excellent reasons.

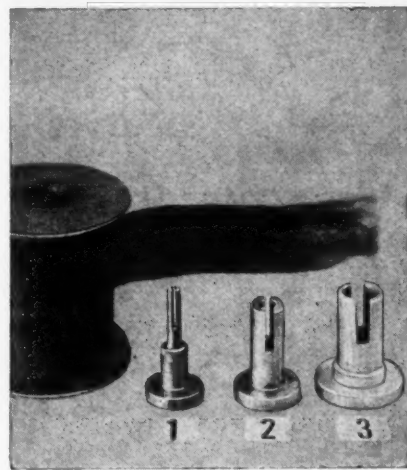
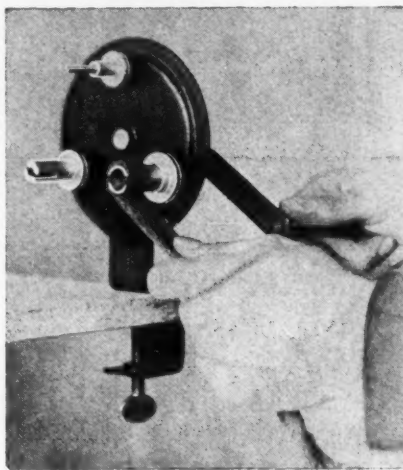
The Sylphon Bellows is a positive seal under all conditions. It is a permanent seal. Its long life cuts service costs. It minimizes power consumption and wear. And with this seal compressors are quieter in operation.

Profit by the experience of the many manufacturers who have adopted the Sylphon Bellows. Avail yourself of the years of research and development that have made this "Miracle in Metal" the most widely preferred device in its field. Write for Bulletin TO-511.

Sylphon SEAMLESS METAL BELLOWS AND THERMOSTAT ASSEMBLIES

THE FULTON SYLPHON CO.
KNOXVILLE, TENNESSEE
Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

New Burnisher For Cleaning Sweat Fittings



Left: Applying steel wool tape to the Benner Burnisher. Right: Roll of tape and chucks for handling various size fittings.

PHILADELPHIA—The Benner Burnisher, a device for thoroughly cleaning sweat fittings, is being advertised by J. R. Duffy Mfg. Co. here.

This device consists of three metal chucks mounted on a disk with a centrally placed crank. This crank, when turned, operates a series of gears which in turn cause the chucks to revolve. These chucks, when wound with a special steel wool tape, serve as the polishing medium,

the fitting to be burnished merely being forced over the proper size chuck while it is revolving.

The tool is fitted with a clamp so that it may be conveniently attached to a workbench or counter.

NEW!

Gilmer's "Eye-ful" Tower

Gilmer BELTS FOR SMALL DRIVES

Your "on-the-counter" Belt Department

\$13.92 PROFIT from the 15" circle it occupies

There it is, the complete Belt Merchandiser! Displays the belts, advertises the belts, measures and identifies the wanted size. An efficient, effective silent salesman that takes up little space, but packs a wallop. Meet the Belt Merchandiser closer up. It consists of:

1. The Gilmer "Handimeter"—a slide-rule type of measurer, as easy to use as it is accurate. Measures instantly any V-belt brought in, up to 75" long and between 3/8" and 3/4" wide—the majority of all belts for small drives.

2. The "Eye-ful" Tower—a circular stand, 15" in diameter at the base by 32 1/2" high, with eight hooks accommodating 70 belts, and giving them good display from any angle. Atop the tower, a high-visibility display sign, on back of which is a perpetual inventory record form.

3. 35 fast-selling Gilmer belts for refrigerators and other appliances.

NOW SELL MORE BELTS! This go-getting Merchandiser comes complete in carton, 35 Gilmer belts hanging on hooks, ready to set up on counter—and sell. Does practically everything except ring up the sale! Oh, yes—included is one copy of "America's Belt Bible," the complete Gilmer catalog, and a window display sign in colors.

Package costs . . . \$19.36
You get . . . \$33.28
YOU MAKE . . . \$13.92

L. H. GILMER CO.
Tacony, Philadelphia

Send me complete Gilmer "Eye-ful" Tower assortment. Bill me \$19.36 through your nearest jobber.

NAME _____
ADDRESS _____

EXTRA VALUE

Copeland

More Sales!

You'll sell more Copelands, because your customers GET MORE FOR THEIR MONEY! Extra features, a famous name in refrigeration, and lower prices! Quality and value to please your customers—sales and profits to please you!

Write TODAY for Full Information!

Copeland Refrigeration Corporation
SIDNEY, OHIO
ASK ABOUT COPELAND COMMERCIAL REFRIGERATION AND WATER COOLERS

Ask for VIRGINIA EXTRA DRY ESOTOO V-METH-L

Be Sure—

use

Virginia Refrigerants

VIRGINIA SMELTING COMPANY
WEST NORFOLK, VIRGINIA

ACE HARD RUBBER LOXIT DOORS
AND COMPLETE ASSEMBLIES

Odorless, vermin proof. No warping or splitting.
Easily installed in openings. All sizes available.

WRITE FOR FREE CATALOG

AMERICAN HARD RUBBER COMPANY
11 MERCER STREET, NEW YORK, N. Y.

MILLS
COMPRESSORS
for Commercial Use

Mills Novelty Company 4100 Fullerton Avenue • Chicago, Illinois

HENRY
COMBINATION
STRAINER
AND LIQUID
INDICATOR

TYPE 888

Gas bubbles passing under liquid sight port reveal shortage of refrigerant in system. Soldered brass shell. Sight port cap and gasket provide added seal and protects glass from breakage. Hemispherical screen has 90% greater filtering area than usual flat disc. 120 mesh reinforced brass screen.

WRITE FOR CATALOG

HENRY VALVE CO. 1001-19 N. SPAULDING AVE. CHICAGO, ILLINOIS
STOCKED BY LEADING JOBBERS

Chieftain

REPLACE YOUR OLD, WORN OUT EQUIPMENT WITH NEW EFFICIENT "CHIEFTAIN"

TECUMSEH PRODUCTS CO., TECUMSEH, MICH.
Canadian distributor: Refrigeration Supplies Co., Ltd., London, Ontario

AMINCO Pressure Controlled Water Regulating Valve . . .

is used to regulate the amount of water passing through water-cooled condensers. Controlled by refrigerant pressure within the condenser and adjustable to maintain any desired pressure.

Aminco Water Valves have a double bellows seal, removable body seat, are free from chatter and will operate on all refrigerants except Ammonia under water pressures from 15 to 200 lbs.

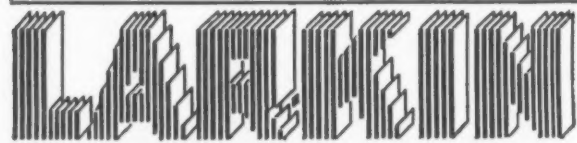
American Injector Company
1481 Fourteenth Avenue Detroit, Mich.
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.
Export: Borg-Warner International, 310 S. Michigan, Chicago, Ill.

Every Food Merchant A Prospect!
For This New Self-Serve Produce Case

It's OPEN! The customer can reach right in—no doors to slide—and embodies a new principle of refrigeration (Pat. appl'd for).

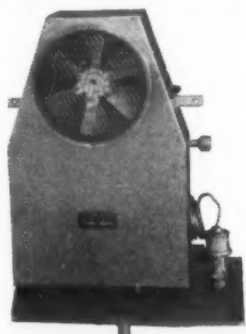
Write for details

SANDERS BUTCHER SUPPLY CO.
2755 W. Fort St., Detroit, Mich.



WALL HUMI-TEMP UNITS
WILL—Make You More Money—Win You More Customers

Today—See Your Jobber or Write Direct to
LARKIN COILS, INC. General Offices and Factory
519 Fair St., S.E., ATLANTA, GA.
Branch Factory—57 E. 11th St., New York City



8 COMPLETELY STOCKED WAREHOUSES
REFRIGERATION AND AIR CONDITIONING

Write for Our Catalog on Your Letterhead
BRANCHES: NEW YORK, DETROIT, CLEVELAND, ST. LOUIS and 3 IN CHICAGO

PARTS.

THE HARRY ALTER CO., 1728 SO. MICHIGAN AVE., CHICAGO, ILL.

Commercial Service

Final List of Complaints That May Be Encountered In Carbonator Servicing

By Arch Black and Dean C. Seitz

Lack of Carbonation

If your customer should say that his carbonator doesn't carbonate or that soda water is flat, this difficulty can be investigated and corrected as follows:

1. The first question to settle is whether or not water enters the carbonator when the pump runs. If it does, water will show and rise in the water glass.

If it does not, make certain that the water is turned on, then open the vent screw on the pump and run the pump for a few minutes. Water should squirt from the open vent with each stroke of the pump. If water does not squirt out of the vent opening, shut off the water, close the water supply, remove the cap nut from the pump, lift up the pump valves and examine them. Wipe them off cleanly and if they do not seat properly drop them in place and tap lightly with a hammer. If these operations do not correct the trouble, replace the valves with new ones.

2. The second problem is to determine whether or not CO₂ gas enters the carbonator. If it does, the gauge on the gas regulator will show pressure. At the same time, gas will be blown from the vent valve on the pump when it is opened. If the gas is not entering the carbonator the gas cylinder is probably empty or a coupling is clogged by a misplaced washer.

3. Third question to be determined is whether the agitator panels inside the carbonator shell are running. Sometimes the set screw holding the upper and lower belt-driven wheels come loose. In this case the wheels slip and the agitators will not move. Watch both the shafts and wheels and it will be easy to determine if the belts are slipping.

4. The next question to be determined is whether or not the water entering the carbonator is too warm. Warm water will not carbonate. It may be found that a check valve in the water line will permit warm water to enter the carbonator in place of cool water. If a means of preventing warm water from entering the carbonator cannot be found, it will be necessary for the service engineer to sell the customer a pre-cooler for the water entering the cabinet.

Air in the carbonator makes the soda water milky in color. Blow off the air by opening the vent on the top of the carbonator occasionally. The body of the carbonator should not be filled with water to too high a point. If the agitator panels are covered, the body is too full.

Purpose of the agitators is to mix the CO₂ gas and water together. This is impossible when the water level is too high. On the Bastian-Blessing carbonator, the water should never stand higher than 4 inches in the water-gauge glass.

Carbonator Fills With Water

1. If the carbonator has filled with water, do not force it to run by holding in the control switch manually, as this will build up high pressure and merely cause the safety valve to blow.

2. The carbonator filling with water is due to gas pressure being too low, or city water pressure being too high. See the following paragraph on "Carbonated Water Tastes Flat."

Carbonated Water Tastes Flat

This is due to the carbonator filling up with plain water which is caused either by too high a city water pressure or by too low a CO₂ gas pressure.

1. Check the pressure on the gas regulator gauge. It should read approximately 120 lbs. If necessary adjust.

2. If the pressure in the CO₂ gas cylinder is low, replace the cylinder with a fresh one.

3. If the water pressure is too high, install a water pressure reducer on the inlet water supply line. This water pressure reducer will automatically reduce the pressure of the incoming water to approximately 10 lbs. pressure.

Water Leaks

1. If water leaks at the agitator shaft, it is probable that the packing nut needs tightening. Turn up tightly and back off one-half turn.

2. If water leaks at the pump plunger in large amounts, the packing nut probably needs tightening. Turn the nut up tightly and back off one-half turn.

3. When repacking the pump plunger or agitator shaft, tighten the nut and turn the large pulley by hand first. Then run the carbonator a few minutes and tighten again.

4. A small amount of plain water will always work out around the plunger. This is unavoidable and should not be classified as a leak. However, no CO₂ gas will leak at this point.

5. Check the block tin leader line running between the carbonator and the soda fountain, also the coils and coolers in the soda fountain water bath compartment. A leak in the leader line may be repaired by cutting out the section that leaks and connecting a new piece with unions. Make certain that connections are tight. Inspect the connections to coils and coolers in the soda fountain water cooling compartment and install new washers, if necessary.

6. If water leaks from the safety valve, it will be necessary to change the valve seat. To do this, shut off the current and the CO₂ gas drums. Drain the carbonator and purge off any gas that may be in it. Before removing the adjustment cap on the safety valve, notice the number of threads which are exposed. When replacing, see that the same number of threads are exposed. After removing the cap, remove the spring and valve.

Install a new rubber seat on the valve and reassemble. As a further check that the safety valve operates satisfactorily, allow the carbonator to build up a pressure of 250 lbs. by holding the switch until this pressure is reached. If the safety valve releases, it is adjusted correctly.

Carbonator Runs Continuously

1. Check the control switch and balancing beam assembly for freedom of operation, and make sure the switch operates on both the up and the down motion.

2. In replacing the washers or tightening the coupling nuts on balancing tank hoses, care must be taken. The hose must be held in its natural position and not allowed to twist while the coupling nuts are tightened. This twist in the hose will hold the balancing tank up and the carbonator will not cut out at the proper point.

3. The washers in the bottom hose coupling on the balancing tank may have become pulpy or swollen, restricting the flow of water from the carbonator to the balancing tank. In this case, they must be replaced.

Carbonator Runs But Delivers No Water

1. This may be due to the city water supply valve shut off.

2. An accumulation of air may be in the pump valve assembly. Purge at the vent screw.

3. Examine the leather seats on the pump valve under the air chamber and the vent cock cap. Replace if worn.

Gas Backs Into City Water Line

1. Clean out the water pump valve seat, tap the valve stem

gently with a hammer to flatten the leather seats so that the valve will shut off.

2. Clean out the back pressure check valve seat assembly and replace the rubber seat.

Summary

It is undoubtedly true that the average refrigeration service engineer has never carefully inspected a carbonator. If this applies to you as a reader, it is suggested that you ask one of your friends who owns a soda fountain to permit you to look over his carbonator carefully.

Take this article with you and read it over paragraph by paragraph with the carbonator in front of you. Locate the gas regulator, trace the gas line from the gas regulator to the carbonator. Trace the inlet water line to the carbonator. Notice the operation of the pump and the electric switch on the carbonator.

After reading this article again with a carbonator in front of you, you should have a clear understanding of the operation of the machinery of the carbonator and be in a position to render the service generally expected of a carbonator service engineer.

Missed - - -

Editor's Note: To service men who missed the early articles in this series on soda fountains and those who want to review the articles and keep them in a convenient form it is suggested that they obtain a copy of Manual SF-1.

For a limited time this book is offered free with a six-month subscription to Air Conditioning & Refrigeration News (\$2.00). Manual SF-1 alone sells for \$1.00. (These prices are for U. S. A. only.)

QuiKold
BEVERAGE COOLERS
10 MODELS
S&S COOLERS
LIMA, OHIO

STOP LEAKS AND NOISE
on old shafts as well as new with
SYNTRON
"ANTI FRICTION"
SHAFT SEALS
Order from your jobber
SYNTRON CO.
140 Lexington Ave., Homer City, Pa.

GET PEAK PERFORMANCE
with **SPORLAN**
Controlled
Performance VALVES

UNIVERSAL COOLER
Our largest customers of many years ago are still our largest customers today. Our policy must be right.
Universal Cooler Corp., Detroit

COMMERCIAL REFRIGERATORS
World's most complete line of commercial cabinets—13 to 84 cu. ft. capacity
MIDWEST
MFG. COMPANY • GALESBURG, ILL.

A Dehydrator that is really Dry.
Mueller Brass Co. Dri-Drier.
MUELLER BRASS CO.
Port Huron, Mich.

BUNDY TUBING
Copper-Braced Steel. Copper Coated Inside and Out. Sizes: 1/4" to 1/2" O.D.
BUNDY TUBING CO., DETROIT

For Information on Motors
FOR ALL TYPES OF
Air Conditioning and Refrigeration Equipment
WRITE TO

Wagner Electric Corporation
444 FLYING AVE. ST. LOUIS, MO.

Shenk Remodels To Celebrate 27th Year

HARRISBURG, Pa.—J. E. Shenk & Son, appliance dealer, celebrated its twenty-seventh year in business by opening newly remodeled display room and offices in Penbrook recently. A special fall showing of appliances was held during September, and souvenirs were given to those attending.

The firm was founded by the late J. E. Shenk, who opened his first store in Penbrook in 1912. The store was moved to its present location here in 1930.

Use CHICAGO SEALS
for seal replacements
A complete line in all sizes
CHICAGO SEAL CO.
20 North Wacker Dr., Chicago

PENN AUTOMATIC CONTROLS AND SWITCHES
Protect the reputation of your product
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

A COMPLETE LINE OF
COMMERCIAL REFRIGERATORS
AND DISPLAY EQUIPMENT
STAINLESS STEEL
GLOEMER MANUFACTURING CO.
ERIE, PA.
WRITE FOR OUR NEW CATALOG

KERO TEST
Valves and Fittings
The Standard of the Industry
Kerotest Manufacturing Co.
Pittsburgh, Pa.

TRAINED MEN
Furnished FREE!
Save time, trouble and money when you need men. Use the U.E.I. Free Placement Bureau. No charge to you or prospective employee. It is our contribution to the industry.
We have U. E. I. trained men available in all parts of the country. For 12 years our graduates have made good as shop mechanics, and as installation and service men in leading organizations. Next time you need a competent man, phone, write, or wire the U. E. I. Free Placement Bureau.
UTILITIES ENGINEERING INSTITUTE
404 N. Wells St. Established 17 West 60th St.
Chicago, Illinois 1927 New York, N. Y.

Dayton V-BELTS
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO
World's Largest Manufacturer of V-Belts

Anaconda Copper Refrigeration Tubes
Unusually soft!
ANACONDA
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices, Waterbury, Conn.

Electrolux Promotions Get Direct Mail Prize

NEW YORK CITY—For its 1939 direct mail advertising in connection with the promotion of the sale of the Electrolux refrigerator, Servel, Inc., has won dual awards granted by the Direct Mail Advertising Association, one of the awards being the "president's cup," given by L. Rohe Walter, president of the association, which was granted for "The Most Outstanding Manufacturer's Direct Mail Campaign of Jobber, Dealer, Consumer Promotion."

Servel, Inc. was also named as a "Direct Mail Leader for 1939" for its high standards in advertising through the mails.

Presentation of the trophy and the "direct mail leader" certificate were made at the eleventh annual banquet of the association held Sept. 28 at the Hotel Roosevelt, New York City.

The direct mail advertising activities which were the basis of the awards to Servel, Inc., were conducted under the direction of H. S. Boyle, sales promotion manager of the company from his headquarters in Evansville, Ind. In the absence of Mr. Boyle at the banquet, P. A. Brown, supervisor of printing of the advertising department of Servel, accepted the cup and certificate award for the company.

In presenting his direct mail exhibit to the association on Sept. 11, 1939, Mr. Boyle pointed out that the company's direct mail advertising had had three main aims, namely: (1) to develop prospects; (2) to give information to gas companies that market the gas refrigerator and to other outlets (the distributors and dealers) in both the urban and rural fields; (3) to promote sales contests.

The awards were made for direct mail advertising in the following categories: Promotional literature explaining the "Don't Take 'NO' For An Answer" contest; the "Man-the-Sales" or "Flying Cloud" campaign, conducted during the spring and summer; the P & G contest jointly sponsored by Proctor & Gamble and Servel; the 4-H Club Food Preparation contest; various kits, booklets, folders, and broadsides and envelope folders, several million of which were distributed throughout the year; the two house organs of the company, namely the "Servel Salesman," and "Servel Utility News," and other miscellaneous items.

Locker Plant Chain In Development

SOUTH BEND, Ind.—A new chain of locker refrigeration plants and services is being developed by John S. Eacock, former assistant secretary-treasurer and controller, and Edmund C. Dickerson, former credit manager and branch auditor of Bendix Home Appliances, Inc.

Mr. Eacock plans to establish headquarters in Detroit, where he will be associated with John D. Layman in the development of the locker chain.

New Style & Printing Technique Make Copeland Catalog More Lively & Easier To Use

SIDNEY, Ohio—Some new ideas in the cataloging of refrigeration equipment are to be found in Copeland Refrigeration Corp.'s catalog No. 40 and supplementary price sheet on commercial refrigeration equipment.

Prime new feature is the provision of a code-word system for use by dealers in telegraphing orders and requests to the factory, which provides pronounceable code words of five letters giving all the information needed for accurate filling of wired orders.

The five letter code word can be easily formed by use of the following table, the first step being to take

the basic three letter word from the price list:

Other main new feature of the catalog is the use of color tinting and varied makeup to provide a variation in every specifications page in the catalog.

This procedure in the planning and printing of the catalog has served to relieve the monotony which is more or less bound to come if specifications are repeated in the same style. Most striking part of this stunt is the use of a sort of "burnt orange" tinting to provide contrast, although there are other variations brought about by the manner in which the tables are set in the pages, etc.

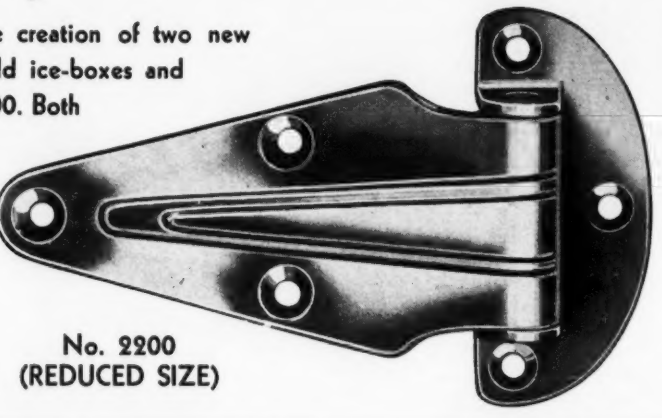
1-2-3	4 (Refrigerant and Application)	5 (Control and Voltage)
	Methyl Freon	110 220 440 208 230 32
Take Three Letter Word From Price List	Low U I Com'l A E High Y O	Pressure B P D H K W Temperature C T G J N X
To This Add	One letter above	and one letter above
Example: 2-Hp. Air-Cooled Unit, 60 Cycle, 3 Phase, Com'l Application, Methyl, Pressure Control 220 Volt		
LEY	A	P

THE BUYER'S GUIDE

KASON Wrought Brass HARDWARE

We are pleased to announce to the trade the creation of two new items of Wrought Brass Hardware for household ice-boxes and cabinets—Latch No. 2100 and Hinge No. 2200. Both of these items have been beautifully fashioned and perfectly engineered and bring the manufacturer of household refrigerators a new high standard of quality in moderate-price hardware. Write for descriptive literature.

KASON HARDWARE CORP'N.
127 Wallabout St., Brooklyn, N. Y.



Ranco COAST TO COAST!

There's a complete stock of Ranco Household Refrigerator and Commercial Controls near you. Dependable jobbers throughout the United States and Canada feature Ranco products.

Ranco INC.,
Columbus, Ohio, U.S.A.

Quick-Freezing Research Planned By Texas U.

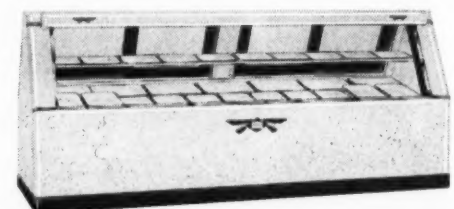
AUSTIN, Tex.—Quick freezing as a means of preserving Texas foodstuffs, long a subject earmarked by the University of Texas for "research when funds are available," is now one of four new projects being undertaken by the school's bureau of engineering research as the result of a \$3,000 boost in the bureau's funds.

The quick freeze and evaporation processes are to be explored in the hope of providing an economical wedge for an invasion of the northern market by Texas foodstuffs, according to W. R. Woolrich, dean of the university's engineering school.

One of the four cooperating agencies of the university's recently launched Texas Industrial & Commercial Research Council, the engineering research bureau is supplemented by fact-finding departments in business research, economic geology, and industrial chemistry.

DOUBLE YOUR PROFITS

Selling
THE PROFIT LINE FOR '39



Refrigerator and compressor sales go together. Sell both on one contract.

THE SHERER FRANCHISE OFFERS: *Complete line of cases, coolers and boxes. *New equipment under development opens new fields for compressor sales.

*Layout department—Store layouts without obligation. *Advertising—Scherer advertises by mail and in trade publications.

Write for catalog and franchise details, mentioning territory desired.

SHERER-GILLET CO., MARSHALL, MICHIGAN

53 YEARS OF SERVICE 1886 1939
PERCIVAL Line meets EVERY NEED!
Includes Coolers, Reach-In Refrigerators, Top Type, Double Duty, Delicatessen, Dairy and Produce Display Cases and Percival Condensing Units.
Quality built; corkboard insulated; porcelain clad; beautifully streamlined. Coiling system is second to none.
Write for attractive prices, literature and Distributor's proposition.
C. L. PERCIVAL CO.
DES MOINES, IOWA

New IMPERIAL SERVICE VALVE KIT for HERMETIC UNITS
For purging, charging and testing the following units:
Airtemp, Crooley, Gibson, Trukold
Bohn SO, Frigidaire, Grunow, U.S.R. & Tel.
Bohn CH-C1, Frigidaire (Late Models), Majestic, Westinghouse
Cold Spot (to 1934), General Electric (CG-1-A16), Sparton, Westinghouse
Cold Spot (1935 and later), General Electric (CG-1-A16), Sparton, Westinghouse (Small Float)
Kit consists of:
1 Valve, with wheel handle, 10 valve adapters, 6 wrenches, packed in steel box.
Also furnished with 2 1/2" or 3" compound retard gauge.
Wheel handle and gauge need not be removed when outfit is placed in box.
THE IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago
IMPERIAL VALVES • FITTINGS • TOOLS • STRAINERS
DEHYDRATORS • CHARGING LINES • FLOATS
ORDER FROM YOUR JOBBER

Changed Credit Policy Asked For Utilities

(Concluded from Page 1, Column 5)
slow up your normal collection efforts.

"If this properly contacted new customer needs new equipment, you'll be the first to have the opportunity to turn down his credit. Let me point out an inconsistency in previous methods.

"You asked a customer for a \$5 deposit on his service account yesterday, and today you agree to sell him a \$150 refrigerator at \$10 down, balance at so much for so many months. As soon as he makes the down payment, sufficient at the most for installation and removal expense, the appliance account is on an open credit basis, even if you do have a repossessable equity.

"It is my hope that this discussion will start us all thinking about other relic methods and systems of the past, which are objectionable to our customers and of no benefit to us.

"What is the value of the signature on a residential service contract? Can't we assist the sales department by substituting an order for residential appliances, rather than the imposing legal document which is so seldom used legally? Why is a phone call not sufficient to move an account from one residence to another?

"Since a dead meter is a dead investment, why delay in reconnecting a service disconnected for non-payment when the account is paid or arrangements made for payment? Why not make a definite effort to improve our phraseology to the customer on the counter, by phone, and particularly in letters?

"Why not allow discount if an account is paid in the office before noon of the day following discount day, since the remittance is on a parity with those mailed on the discount day? Why not allow one discount each calendar year without request or reason?

"The right answers to these and similar questions will build a personality for the utility operating company, which its customers cannot help but respect and admire."

Appliance Sales Again Gain In Virginia

ALEXANDRIA, Va.—Refrigeration equipment continued its fast pace in the territory of Virginia Public Service Co. during August, sales of 722 household and 81 commercial units being reported by dealers for a total of 803 units, against 696 in the same month of last year.

Electric range sales also kept to higher than 1938 marks, 108 units being reported for the month as compared with 61 last year. Water heater sales were double their 1938 mark, with 36 units as compared with 18 a year ago.

Sales of all appliances totaled 1,354 units during August, as compared with 1,105 in the same month of 1938. Washer sales totaled 393 units, and ironer sales 11.

For the first eight months of the year, sales of refrigeration equipment in Virginia Public Service territory amounted to 7,131 units, against 5,513 in the same period of 1938. A comparison of sales of the "big three" appliances through August follows:

	1939	1938
Refrigeration	7,131	5,513
Ranges	779	688
Water Heaters	326	263

Hospital Air Conditioning Is Major Topic At Lehigh Conference Next Month

(Concluded from Page 1, Column 2)
in hospitals.

Dr. W. F. Wells of the University of Pennsylvania School of Medicine will speak on "Air as a Vehicle of Contagion"; C. F. Neargard, hospital consultant of New York City, will discuss "A Realistic Approach to Hospital Air Conditioning"; and Dr. M. B. Ferderber of Magee hospital, Pittsburgh, in his paper will outline "Uses of Air Conditioning in Hospitals."

Dean A. C. Callen of Lehigh University will act as chairman of the final session Saturday morning, when J. C. Rosenmiller of York, chairman of the public relations committee of the Air Conditioning Manufacturers Association, will speak on "Creating a Demand For Air Air Conditioning."

Other speakers will be L. L. Lewis, vice president of Carrier Corp., who will discuss "Moisture Removal from Blast Furnace Air"; J. C. Albright of the Marley Co., New York City, who will talk on "Climate and Air Conditioning"; and Charles Brooks, pathologist, Bureau of Plant Industry, Washington, D. C., who will describe "The Effect of Modified Atmospheres on Cold Storage."

Reservations for hotel accommodations should be sent to Prof. B. H. Jennings of Lehigh University, chairman of the conference committee which includes: W. A. Bornemann, W. H. Carrier, D. L. Fiske, W. B. Henderson, J. R. Hertzler, F. V.

Larkin, S. R. Lewis, H. M. Roberts, J. L. Rosenmiller, M. C. Stuart, and C. C. Williams.

Nema Household Sales Even Off In August

(Concluded from Page 1, Column 2)
ments led comparable 1938 figures by 528,093 units, with a total for the period of 1,677,914 units this year, against 1,149,821 last year.

August sales totals of commercial refrigeration equipment to distributors were nearly equal to the July totals, and were well ahead of sales reported in August, 1938.

Condensing units sold separately, in sizes from smaller than 1/4 hp. to 50 hp. totaled 8,116 units in August, compared to 6,601 units in the same month of 1938.

In the self-contained equipment brackets increases ranged from 100 units in pressure water coolers, to about 400 units in ice cream cabinets, the gain in sales of beverage coolers this August over last being not quite that great.

Hotpoint In Hartsville

HARTSVILLE, S. C. — "Bill" Williams, who operates as Hartsville Electric Supply Co., has been appointed Hotpoint dealer in this territory.

Wells Named Sales Head Of Eureka Cleaner Co.

DETROIT—Edward P. Wells has been appointed vice president and general sales manager of the Eureka Vacuum Cleaner Co., announces Henry W. Burritt, president of the company.

Mr. Wells has formerly been associated with the Eureka company and was at one time vice president in charge of sales for the Kalamazoo Stove Co. Mr. Wells' appointment was called by Eureka officials "an important step in our program of expansion."

Nebraska Power Aids Dealers In Fall Sales Efforts

(Concluded from Page 1, Column 3)
radio program, "The Homemaker Club of the Air."

All appliances will be pushed to the limit during the holiday season, with "Gifts That Go On Giving" as the theme of the Christmas campaign. Dealers can start their gift selling campaign early by using a lay-away plan after receiving a small down payment, with deliveries to be made the day before Christmas.

Sears In West Bend

WEST BEND, Wis.—Sears, Roebuck & Co. has leased the location formerly occupied by Wm. Peters, Inc., local department store, and will operate a hardware and electrical appliance store in these quarters.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

SERVICE MANAGER capable of taking full charge of department. Experienced in handling field service personnel, repair shops, warehouse, shipping, office, either for national manufacturer or local distributor. Know every phase of the electrical appliance industry. Good organizer, best ability and character references. Interviews solicited. Box 1181, Air Conditioning & Refrigeration News.

FRANCHISE WANTED

EXPORT TO SCANDINAVIA. We seek connection with first-class American manufacturers of refrigeration accessories. Established 1910, we cover this market with young, energetic people and are well introduced among the refrigeration and air conditioning dealers. We are only considering in working on basis of sole distribution rights. Box 1182, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

COMMERCIAL LINE refrigerator display cases, walk-in coolers, and refrigerators; also direct draw mechanically cooled beer coolers. Sell with Ehrlich Compressors or with any other make. Attractive discounts also financing arrangements to help sell. 70 years in business. Write for full information. EHRLICH REFRIGERATOR MFG. CO., St. Joseph, Mo.

BUSINESS OPPORTUNITIES

FOR SALE—Commercial refrigeration business and manufacturing equipment for complete line of condensing units. Interested inquirers write Box No. 1179, Air Conditioning & Refrigeration News for further data.

FROZEN FOOD. Make money during winter slack seasons in this fast growing new industry. Build freezer and storage cabinets for your own use, rent, or sale. Use your spare time profitably. Our new construction amazingly simple. Send 25¢ for complete information. SIERRA MADRE MFG. CO., Box 282, Sierra Madre, California.

EQUIPMENT WANTED

CASH FOR your coin meters. Wanted:

Any quantity with 15, 20 or 25-cents-a-day gears. Write at once and advise the condition and quantity for sale. State price you expect. Address Box 1156, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

WE HAVE about one hundred Frigidaire compressors in assorted models (K-N-C-W-FW-A-etc.). These are not overhauled and are to be sold in an "as is" condition. Must be disposed of quickly. No reasonable offer refused. Box No. 1176, Air Conditioning & Refrigeration News.

AVAILABLE 29 used electric refrigerators and 21 used electric ranges. List furnished on request. PITTSFIELD COAL GAS COMPANY, Pittsfield, Mass.

REPAIR SERVICE

GENERAL ELECTRIC DR1 and DR2 Monitor Top units exchanged, \$30.00 F.O.B. our factory. Send your defective unit. On receipt, we make immediate shipment of completely rebuilt, refinished unit with one year unconditional guarantee. Like new in every respect. Westinghouse and Servel hermetic units rebuilt and guaranteed. REFRIGERATION MAINTENANCE CORPORATION, 321-27 East Grand Avenue, Chicago, Illinois.

G.E. and Westinghouse hermetic units rebuilt with factory equipment. G.E. DR1-DR2—\$30.00; Westinghouse \$27.50; one year guarantee, prices on other models on request. Deal with the original hermetic unit rebuilders—REX REFRIGERATION SERVICE, INC., 2226 S. State St., Chicago, Ill.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

DOMESTIC TYPE thermostatic controls reconditioned like new. Precision work by experts. Years of satisfied customers, among largest in the country. All work guaranteed. Try us and be convinced. The largest thermostatic repair service in the country. It's your guarantee. Prices on request. UNITED REPAIR CO., INC., 342 W. 70th St., New York City.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

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